American MILK REVIEW

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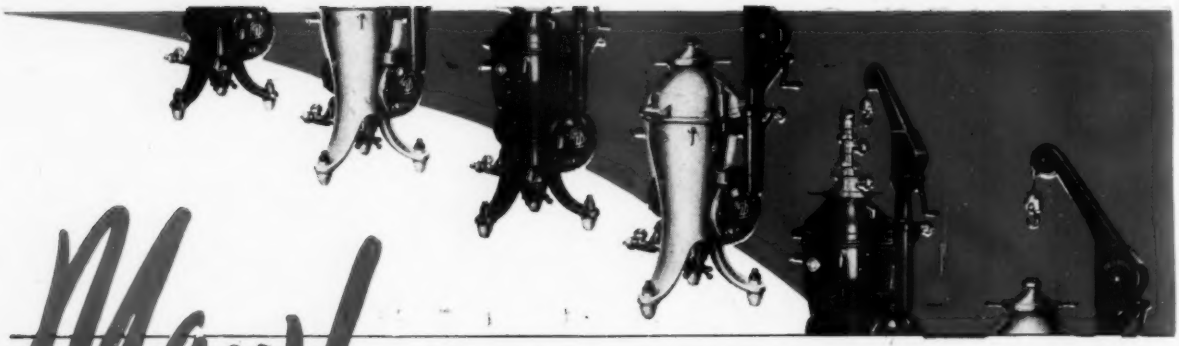

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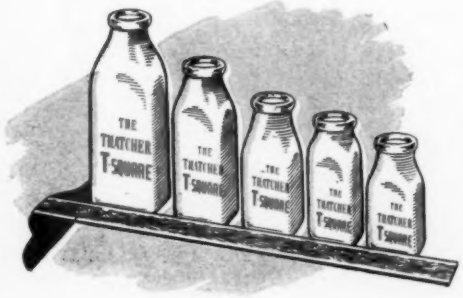

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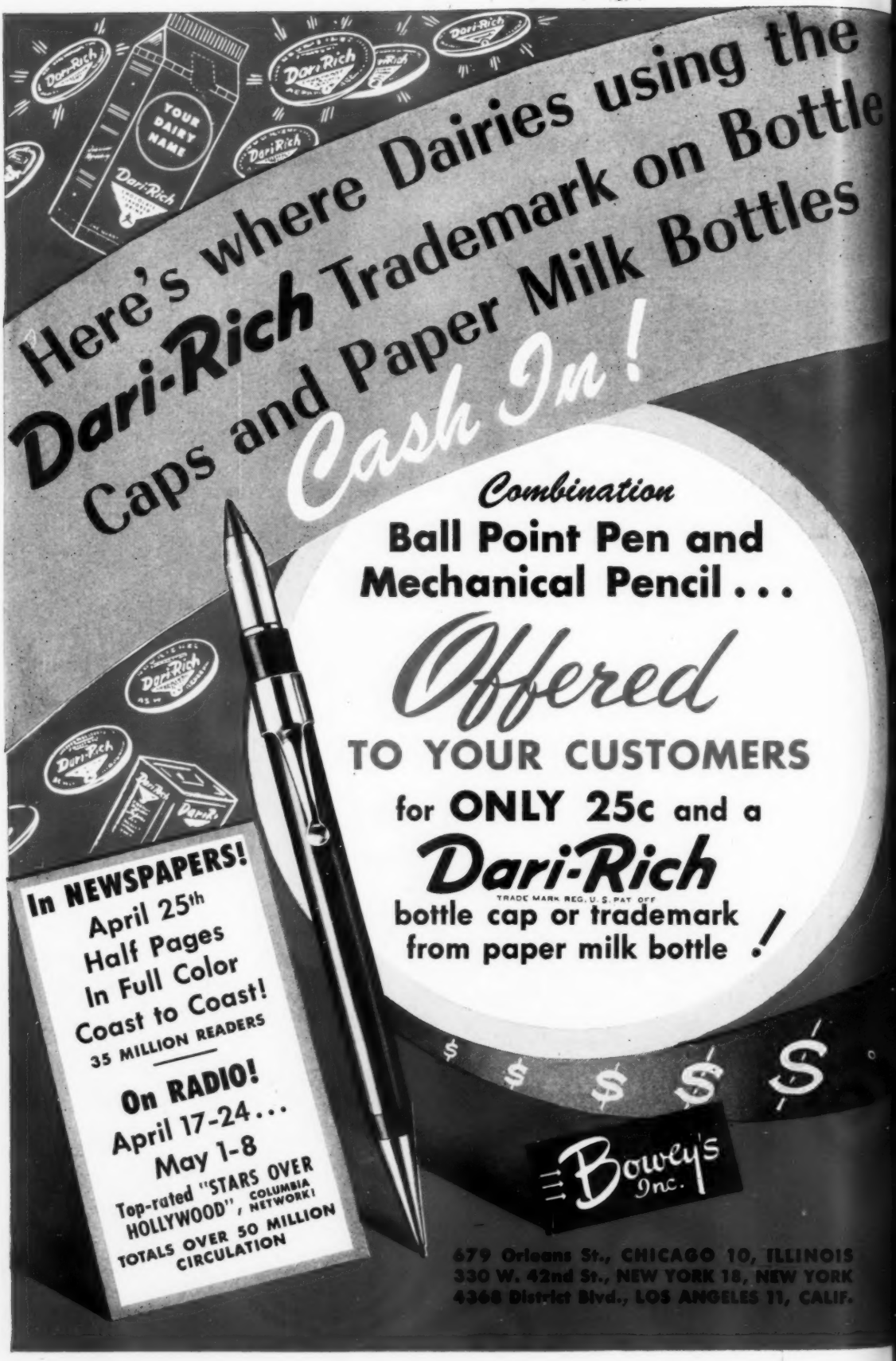
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ADDRESS_____

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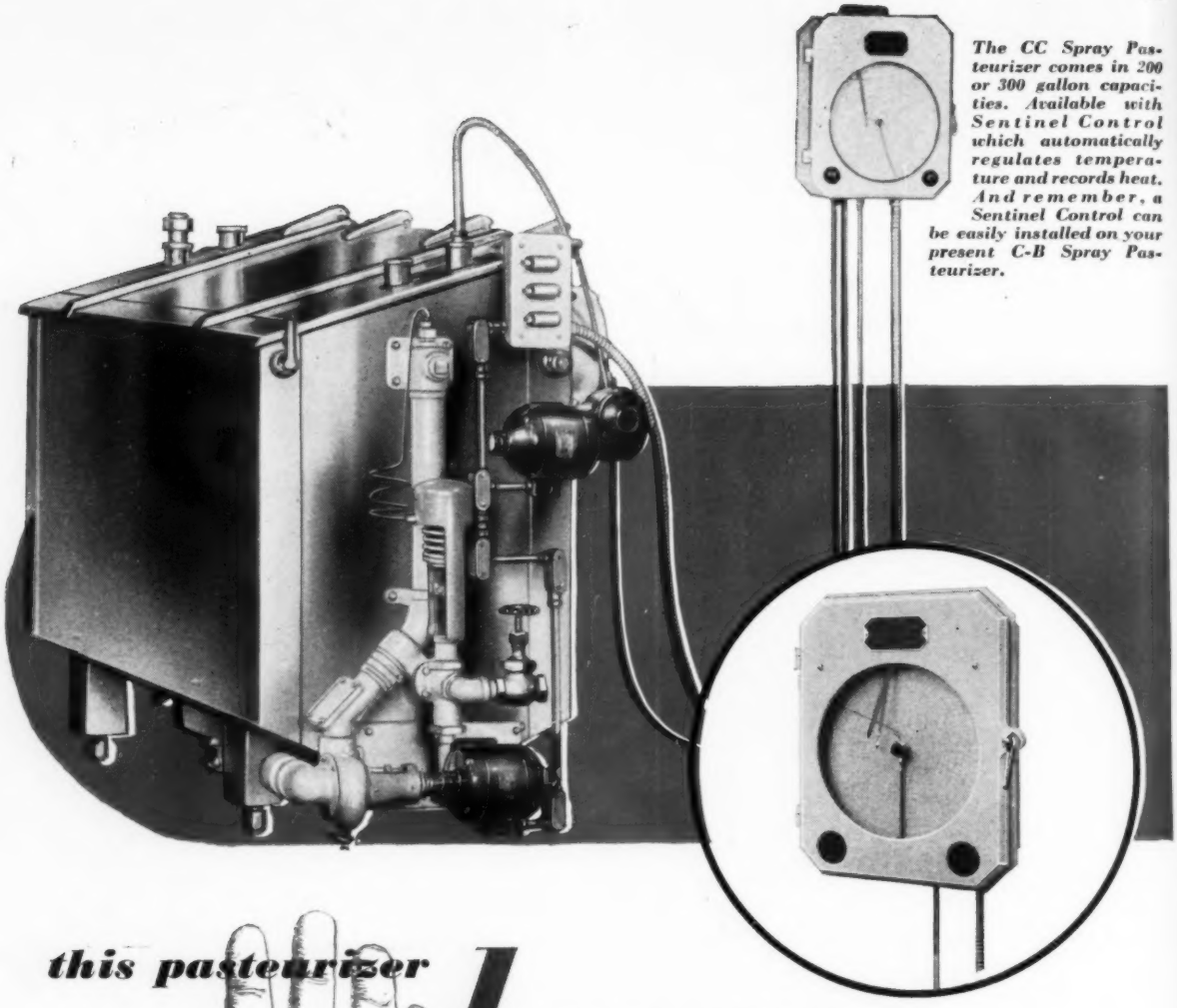

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American MILK REVIEW

VOLUME 10 - - MARCH 1948 - - NUMBER 3

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THE CONNECTICUT PLAN

Level Production Incentive Plan Increases Fall Production in a Year of Poor Pastures and High Feed Costs — Connecticut Officials Are Optimistic

***By* FRANK F. ATWOOD**

Last summer the American Milk Review carried the story of Connecticut's venture in level production. The article provoked wide interest in this important phase of the industry. The plan has been in operation a short eight months but results are already beginning to show. The Review is happy to present the sequel to its original article in this fine story of the Connecticut Plan.

●

LAST FALL WAS A TOUGH TIME to make milk in New England. For 29 days in October there was only 2/100ths of an inch of rain at Hartford. Pastures were dry and brown. Feed was still going up and farmers buying as little as possible.

In the whole Northeast, the milk supply was shrinking through October and November. It isn't back to normal yet. But Connecticut farmers produced two million pounds more milk, in each of those two difficult months, than they produced the year before.

They had no more cows. They fed less grain. They had poorer pasture, and poorer hay. But they made more milk.

The reason was the Connecticut Level Production Incentive Plan, a smashing success in its first year of operation, and the plan is as simple as it was effective.

Last May and June, the State of Connecticut, through an act of its Legislature and an order of the State Milk Administrator, collected 50 cents a hundred pounds, of farmers' money, on the milk produced in those flush months. When October and November came, the State paid the money back to farmers. In October, the pay-back was 57 cents a hundred pounds. In November it was a fat 66 cents a hundred, more than a cent and a half for every quart that went to market.

DONALD O. HAMMERBERG

That was a thumping bonus for fall production, and it brought out the milk.

Farmers Like New Plan

It was a convincing demonstration. The Level Production Incentive Plan has won acceptance. Farmers like it, and they are planning now to cash in on its benefits next year. Milk Administrator Donald O. Hammerberg reports 100 per cent compliance with the order, a minimum of administrative difficulties, and almost negligible expense. Consumers had more locally produced milk through the fall shortage season, and it cost them no more in the bottle. It was a farmers' transaction, first and last. It did not affect the consumer's price, either up or down.

Dealers Favor Plan

Connecticut milk dealers, who went on record for the program at an Administrator's hearing before the order was written, regard this as the great advantage of the Level Production Incentive Plan. It avoids all the trouble and the arguments with customers involved in changing prices. Some of them had their doubts, it's true but they went along. Now they are as firmlly sold as any other segment of the industry.

It wasn't done overnight. Connecticut first heard of a "take-out and pay-back" plan as worked in Louisville, Ky. It has been talked about in farmers' and in dealers' meetings since the fall of 1945. Three public hearings have been held by the State Milk Administrator, the first of them in February, 1946. The Level Production Plan was the subject also of a legislative amendment to the Milk Control Act. The debate in committee hearings and on the floor was loud and long.

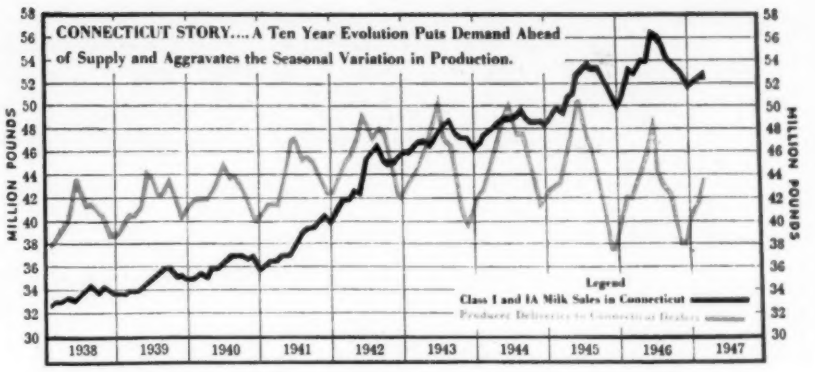
Administrator Hammerberg, looking back today, thinks it was fortunate that legislative action was required to put the plan in operation. The delay, the debate, the hearings, all made their contribution to the education of producers, dealers and the public. When the plan was started, although not everybody liked it, most of them understood it thoroughly.

The original Milk Control Act, Mr.

KENNETH E. GEYER

Hammerberg had decided, with legal advice, did not give him authority to levy on the funds due milk producers, withhold this money from them several months, and redistribute it. That authority was voted by the Legislature, and only just in time. The amendment became law early in May of 1947. Dealers made their first deductions from farmers' checks on May deliveries of milk.

A total of $438,500 was collected, and turned over to a special fund in the State Treasury. The amount was divided in two equal parts, and a little over $219,000 was available for distribution in each of the two fall months.



Under authority granted in the act, the Administrator withheld almost $11,000 in reserve, for payment of late claims and adjustment of any errors that might be found. It was more than he needed. Most of it is still in the Treasury and will go back to farmers in the fall of 1948.

The actual distribution to farmers totalled $427,552.73. The average premium for the two fall months was 61.2 cents a hundred pounds. The Class I price in October was $5.76 for 3.7 milk, and utilization was close to 100 per cent Class I. Connecticut farmers pocketed close to $6.33 a hundred for their entire production in that month. In November, the Class I price went up to $6.06, and with a premium of 66 cents, that meant $6.72 returns to farmers at the dealer's platform for Class I milk.

It should be pointed out that the plan did not apply to quite all the farmers in the state. In the first place, it affected only milk produced within Connecticut and sold within the state. Connecticut farmers shipping to Rhode Island did not share, and neither did New York State farmers shipping to Connecticut.

It did not affect producer-dealers selling only the milk from their own farms, although producer-dealers who bought milk from other farmers for resale were included.

It did not affect cooperatives doing a retail distribution business, unless they chose to enter the program, and there were several small cooperatives that stayed out.

Money was collected, however, from 3,527 producers in May, and from 3,482 in June. Money was returned to 3,541 producers in October and 3,427 in November.

Exceptions as Always

The exceptions, as might have been anticipated, caused some of the Administrator's difficulties. One dealer, who had made deductions in the spring and turned the money over to the State, went out of business before fall. His producers scattered to a number of other buyers, two of them joining one of the non-participating co-ops. They had contributed to the fund. When fall came they naturally expected to share in the distribution, but the cooperative was not in the plan. The Administrator solved this one by returning the money that had been withheld from the farmers in the spring.

One producer ships from two farms, one on the Connecticut side of the state line, the other in New York. Shipments reported from the Connecticut farm in the fall were so unusually high that they caught an auditor's eye, and this claim has not yet been paid.

One producer-dealer, who disliked the plan on principle, at first refused to pay the assessment on his own farm production. He was persuaded to do so in a conference at the Administrator's office, and that made the record complete. Every dealer paid every dollar that was due the fund, and there was no litigation.

Mr. Hammerberg, who has been riding herd on the Connecticut milk market since 1943, dismisses these difficulties as hardly worth mentioning. "We haven't had any difficulty at all," he says," and it hasn't cost us more than $50." There wasn't any court expense. Cost was a very minor item.

The Administrator has recently completed his annual swing around the state, attending a meeting of wholesale milk producers in each county when members of the Wholesale Milk Producers' Council were elected. In the eight meetings not one farmer arose to speak against the Level Production Incentive Plan. There was interest, and there were questions, but no opposition.

Ken Geyer found the same reaction in 18 district meetings of the Connecticut Milk Producers' Association. "If we hadn't brought it up," he said, "I don't think anybody would have mentioned it." The plan has had such good acceptance that it is no longer a live topic in a farmers' meeting.

Why? Well, Mr. Geyer has been thinking about that question.

Hostility at First

The high "take-out" rate of 50 cents a hundred is one of the reasons for the plan's success, he feels. It aroused hostility at first, and it was higher than had been tried in Louisville or Washington, D. C., where a version of the "Louisville Plan" was also launched. At a lower price level, a lower "take-out" might be effective, Mr. Geyer thinks, but on $6 milk, a penalty or bonus of 25 or 30 cents isn't enough to make a farmer change his production plans. Fifty cents a hundred was a stiff jolt in the spring, but 66 cents a hundred on November milk was a return worth working for.

And farmers did work for it. Many of them had bred their cows for fall freshening even before there was any assurance that there would be a Level Production Incentive program. This was one result of the educational campaign. They had been promised that something would be done to bring more money for fall milk, and the Administrator had announced a seasonal pricing system that was to go into effect if the Legislature turned down the alternative proposal.

It is worth noting, too, that the period covered by the spring "take-out" was the same as the fall "pay-back," two months in each case. With generally lower production in the fall, even the farmers whose production fell, and who actually lost money on the deal, saw a bonus rate on their milk checks that was higher than the deduction rate had been last spring. That made it easier, somehow, to take their loss. If the dis-

(Please Turn to Page 59)

EDITORIALLY SPEAKING . . .

Level Production Plans

AMONG THE CASUALTIES of war were milk production schedules. The rapid increase in demand for milk plus labor shortages, grain prices, and the general nature of the wartime period made serious inroads into what progress had been achieved toward level production.

Before the war a number of methods designed to reduce summer production and increase fall production were tried out. With the cessation of hostilities old plans were revived and new ones proposed. One of the latest of these plans is Connecticut's Level Incentive Production Plan.

On another page of the *Review* this plan is discussed in greater detail. There appears to be little doubt that the plan is a workable one. A first in any such proposal is simplicity. The plan must be easy to understand. The record of 100 per cent success in collecting payments without resort to litigation is pretty fair proof that producers understand the Connecticut plan.

The real proof of the validity of any plan, however, is whether or not it works. Although the Connecticut scheme has not been in operation long enough to furnish sufficient evidence to justify final conclusions the portents are good. In a year that saw fall pastures at their poorest in many a year, Connecticut production was higher in the fall of 1947 than it was in 1946. It was not much higher, to be sure, but whereas other markets showed a decline in production per producer, the Connecticut story was the equal or superior of the preceding year.

Connecticut officials make no elaborate claims for the plan. It is basically a further development of the famous Louisville Plan. The essence of the scheme is pricing. Pay more for the milk in the fall than in the spring and production is likely to increase. This is not particularly new. The unique part of the plan is in the method by which this price variation is achieved without a corresponding change in the retail or wholesale market prices. It is done by deducting a portion of the market price in the flush months and adding it back on again in the fall. The money is held in a special fund and administered by the State Milk Administrator. The question, Connecticut officials say, is "Shall the money be held by the consumer or shall it be held by the State?"

The plan has much to recommend it. The industry will do well to give it careful examination.

•

Watch Those Tires

NOT LONG AGO A STUDY of the profits of six leading New York City milk companies revealed a slender one-third of cent per quart margin of profit. On the basis of this figure, it is obvious that the dairy industry does not have money to throw around. Although the fluid milk and dairy products business is one of the largest if not the largest single enterprise in the nation, to operate successfully on such a small profit requires careful and efficient conduct.

Transportation is a large factor in milk handling. Practically every pound of milk that is used in the industry makes a journey from producer to handler and thence to consumer. More than fifty thousand retail delivery trucks are on the road every day. Additional thousands of trucks pick up milk from the farms and carry it to railroad shipping points or haul it directly to the plant. Nearly a half million tires are consumed annually by the dairy industry. This is a ten or fifteen million dollar item and one not to be dismissed without some thought. Proper attention to details of maintenance and proper use can result in substantial savings. This type of efficiency, the net effect of which is a lower unit cost, is not only desirable it is necessary. As the competition for the consumer's food dollar increases every phase of the industry's operation must be scrutinized. The rubber on which the nation's milk goes to market is a good place to begin.

•

"Is This A Dagger . . ."

LEST DEALERS gain the impression that their lot alone is the burdensome one we present a brief marketing note from Scotland.

"First real instance of producers defying a Government authority has been offered in Lerwick, Scotland, where producers have indicated to the Ministry of Food that they intend to adhere to their decision to sell at 6d per pint and not at 5½d as instructed by the Ministry of Food.

This decision is based on the rising costs of feeding stuffs and the refusal of the local milk producers to accept dictation from a distant source.

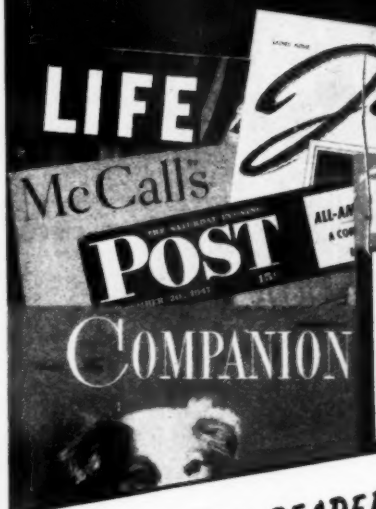
The local issues apart, this raises a most important issue. For years producers and retailers have been dictated to as to selling prices of their produce, where mutual agreement has failed to arrive at a satisfactory price. Rising costs of commodities needed by the producers-feeding stuffs, transport and staff wages, in the case of the dairyman—have repeatedly forced revisions of the approved prices but only too often after the whole price status has become uneconomic. In Lerwick producers have refused to accept this basis and have demonstrated that producers, too, can adopt a rigid attitude.

The dairyman's attitute here is that he can sell his product at a given price, (the 5½d winter and 5d summer) approved by the Ministry, if feeding stuff prices adopt a time limit. Mid-January, was fixed by the producers in Shetland as the deadline beyond which they would not go. Their alternative is that they will go out of dairy farming and feed beef cattle, demonstrating their unwillingness to remain in a business which they contend, is no longer a paying proposition. This trend, towards a producer's strike is a move of definite importance."

There are probably a number of lessons to be derived from this story. The one that sticks in our mind, however, is a question. What happens when the irresistible force of His Majesty's Government meets the immovable object of Scottish stubborness? The article has a familiar if unpleasant ring and serves to underline human nature as the ever-present imponderable confounding the best efforts toward economic planning.

Here's the Big News of '48

GREEN SPOT LAUNCHES NATIONAL ADVERTISING CAMPAIGN for Exclusive Dairy Distribution!



Rough draft of one of the full-color ads now in production

COMBINED READERSHIP
61,500,000
THIRSTY CUSTOMERS
every month!

HERE'S WHERE YOU CASH IN on the first big national advertising campaign on orangeade in many years. Ads like the above will appear in late spring and continue throughout the summer. The pulling power of these great national magazines will create a terrific demand for Green Spot, so get set now to tie in with the campaign. Plenty of dealer helps and merchandising material ready for you—and there's still time to investigate the advantages of handling Green Spot in your community if you're looking for a real *quality* orangeade.

SEE YOUR JOBBER!

Over 100 Dairy Supply Jobbers in the U. S. to Serve You

Green Spot

GREEN SPOT, INC. • LOS ANGELES 21, CALIF.

T. KLINE HAMILTON

Portrait of a Dairyman

THERE WAS A TIME, NOT LONG AGO, when to be born in Ohio was to have a head start on the road to the White House. Indeed, as one studies the history of our nation one becomes increasingly aware of the great influence that has been exercised by this first State west of the Appalachians. Nearly a century and a half has elapsed since the army of George Rogers Clark waded across the "drowned lands" by the Wabash and added an empire to the new nation along the Atlantic. Since that time, in politics, in industry, in education, in all phases of our national life the State of Ohio has had a large part in determining the course of our history.

It is not surprising that one of the leaders in the dairy industry should come from this land of steel and corn, of cattle and rubber. The name is T. Kline Hamilton and he personifies a kind of reasonable dynamite that can synthesize action and compromise into a tool for growth.

Mr. Hamilton is a native of the Buckeye State. His home is in Columbus. The dairy industry in Ohio knows him as the Executive Vice-President of the Diamond Milk Company, as a sparkplug in the affairs of the Columbus' healthy Milk Distributors Association, and as an energetic member of the Ohio Dairy Products Association. At the Miami Beach Convention of the Milk Industry Foundation last fall he stepped onto the national scene when he was elected Vice-president of the Foundation.

At first glance there appears to be little connection between philosophy and the dairy industry. Yet there is a connection. As men think so do they act. What Mr. Hamilton thinks will be reflected in thought and act throughout the industry. It is refreshing, therefore, to find that this man has a philosophy commensurate with his position of leadership. He is not negative, he is positive. In a pamphlet entitled, "Streamlined Milk Delivery Service—An Economic Necessity" he has laid his thinking on the line. "The real question," he says, "and the only choice we have in the matter, is this: 'Will we wait until we are forced by economic conditions, competition or government orders, or does the dairy industry have the intelligence, the ingenuity, the imagination, the courage, the unity and the determination to meet the challenge of the post-war period to get more milk to more people at less cost?' "

The choice is an obvious one. Its execution hinges somewhat on the weather, somewhat on the soil, somewhat on the cows. For the most part, however, it is a matter of men and leaders. Mr. Hamilton appears to be plenty of both.

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MODEL 474—Straightline washer with double jet plates. Will wash a case of bottles every 30 seconds. Steam or chlorine sterilization.

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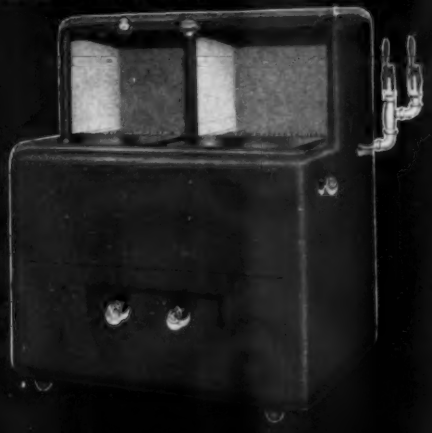


TIRES CAN COST YOU MONEY

Improper Air Pressure, Fast Starts, Mechanical Irregularities Are Important Features in an Intelligent Tire Conservation Program

A HALF CENTURY PAST, when oxen furnished the principal source of power on New England farms, a cardinal tenet of breaking cattle to the yoke was, "Don't never hitch 'em to somethin' they can't move." The change from cart and beast to gasoline engine and rubber tire was abrupt. The maxim, however, remains applicable. Use the equipment as it is supposed to be used. Whether it is oxen or clarifiers or tires the principal is the same. Use the equipment as it is supposed to be used and the results will be commensurate with the caliber of the material.

A ten million dollar tire bill is an important charge in an industry that figures its profit in terms of a third a cent per quart. A thousand quart load will return a profit of $3.33. Fifty dollar tires do not grow on trees and a careless driver can eat up more profit than a congressional investigation. The lad who burns up good rubber with wheel spinning starts or the Joe who leaves the side walls of his tires scattered along a dozen curb stones are the boys who can turn a pay load into nutritive deficit faster than a health inspector can make a swab test.

Fifty Per Cent Longer Life

According to garage men driving and maintenance are the key to tire longevity. The same size and make of tire will last from fifty to seventy five per cent longer when given proper care. One garage man, when asked what he considered a reasonable mileage to expect from a tire doing service on a retail milk delivery truck said, "Well if you're talking about A's trucks', ten thousand miles is a good estimate. If you're talking about B's trucks, fifteen to eighteen thousand is good mileage". The gentleman went on to explain that A always drove as fast as possible, always slammed on the brakes, always spun the wheels, and in general was guilty of all the sins against an honest tire that are known to man. A's drivers, on the other hand, covered just as much ground at a reasonable speed in just about the same time and made their tires last half again as long as B's.

A tire is a remarkable piece of equipment. It is, however, not indestructible. The B. F. Goodrich Company lists 93 factors that affect the life of a truck tire. These factors can be divided into six groups, some of which are beyond control, most of which are not.

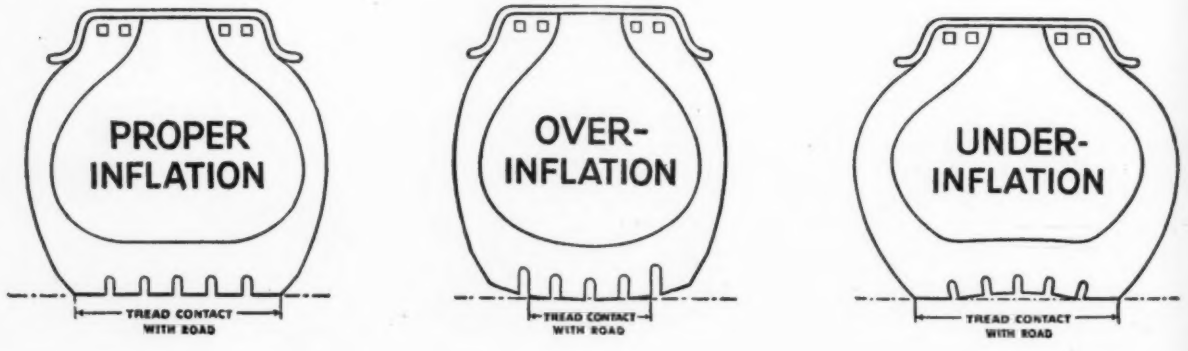
1. Tire factors such as overinflation, undersized tires, and bleeding hot tires.
2. Vehicle factors such as overloading, unequalized brakes, and sprung axles.
3. Driving habits such as fast starts, driving over curbs, excessive speeds.
4. Road conditions such as rutted roads and high crowned roads.
5. Tubes such as leaking valve caps, inaccurate air gauges, and grit or pebbles between tube and casing.
6. Miscellaneous such as hot weather, loose tire chains, and storing tires exposed to grease and oil.

Air Pressure Is Important

Listed high on any tabulation of factors affecting truck tire life is air pressure. Air pressure can be too much or too little. It is common practice to compensate for overloading by putting more air in the tires. Far from compensating for the excess weight, the added air actually weakens the cord body of the tire by reducing its ability to absorb shocks. Air is still free but too much of it will quite likely run you into a sizeable amount of the long green. Overinflation leads to these costly results: (1) rapid wear in the center portion of the tread; (2) increased tendency toward bruises and impact breaks; (3) excessive strain on beads and rim; (4) abnormal tire growth, stretching tread and causing tread cracking; (5) abnormal stresses and strains in the tread area increase the tendency toward tread cracking; (6) more cuts and snags because rubber under tension is more susceptible to this type of injury; (7) harder riding and increased equipment upkeep charges—tires' cushioning effect greatly reduced; (8) reduces traction and skid resistance because of smaller area of tread in contact with the road.

Underinflation can be equally disastrous. Tires are designed to operate at certain recommended inflations which provide normal flexing with proper deflection and road con-

Either too much or too little air pressure decreases tire service



1. WHAT IS IT? A modern, scientific device for freezing ice cream *on your own premises.*

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tact. If this flexing is changed from normal by underinflation, satisfactory service cannot be obtained. Too little air in a tire leads to: (1) tread wear on shoulders; (2) irregular tread wear; (3) excessive heat causing ply separation; (4) increased tendency to bruise; (5) tread separation.

Care Is the Answer

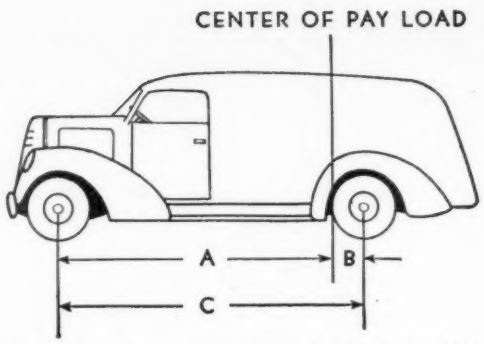
A little care will go a long way toward overcoming the dual threat from inadequate air pressure. Proper air pressure practices include inflating tires to proper pressure *when tires are cool* and the use of air pressures corresponding to the actual loads carried. There are times when trucks are underloaded. If air pressures for a heavier load are used, overinflation will be experienced when the truck is underloaded. Never "bleed" tires to relieve build up of pressure. Tire design recognizes that the tire temperature will increase when the tire is in service and allows for the normal "build-up" in air pressure. Tire temperature and air pressure will remain within limits that are not harmful to the tire when used in accordance with the proper recommendations for load and air pressure. If excessive build-up of air pressure occurs, either load or speed or a combination of both is responsible. Either load or speed or both must, therefore, be reduced to obtain economical service. Finally the size and type of tire that has the capacity to carry the load must be used.

Overloading and improper load distribution can cause a multitude of difficulties. Overloading will cause tire cords to weaken and break. Heat, rubber's worst enemy, is generated by overloading and results in a drastic loss of tire strength. Wiping or scuffing the outer edges of the tread and an increased number of bruises are other fruits of overloading.

Improper load distribution can contribute its share of sorrow to the truck operator. One tire often carries much more weight than the others. Many times one side of the truck is lighter than the other and the wheels on that side may slip when the truck is started. There are few more efficient ways of using up rubber than to grind it off by spinning the wheels.

Analyze Load Distribution

Neither overloading or load distribution are necessary. They can be avoided by analyzing each truck or trailer unit according to tire size, that is, the axle carrying capacity of the tires, and distributing the load accordingly. The load should be balanced across the width of the body according



to weight and on semi-trailer units the load should be distributed so that each axle and fifth wheel carries its share according to the carrying capacity of the tires.

The easiest way to determine tire loads is to weigh the load on the front and back wheels by placing each set of wheels, when the truck is loaded, on a platform scale. Drivers do not carry platform scales around in their back pockets and it is often necessary to resort to mathematics to ascertain the load distribution. There is a simple formula for determining load distribution. A glance at the accompanying diagram, or perhaps a half hour's study would be more accurate, will show the meaning of the letters A, B, and C used in the formula.

$$\text{Pay load on front axle} = \frac{\text{B x total pay load}}{\text{C}}$$

$$\text{Pay load on rear axle} = \frac{\text{A x total pay load}}{\text{C}}$$

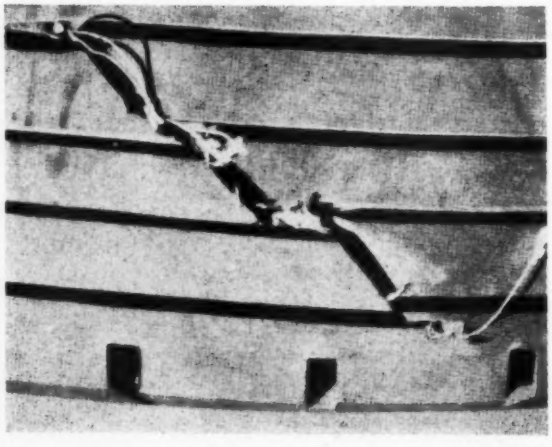
When the pay load on each axle has been determined the empty weight per axle must be added to the respective axles. For example, suppose there is a truck equipped with single tires on front and duals on the rear. The total pay load is 11,500 lbs. The front axle carries 4000 lbs. empty weight and the rear axle carries 6000 lbs. empty weight. The truck dimensions are A, 170″, B, 10″ and C, 180″. According to the formula

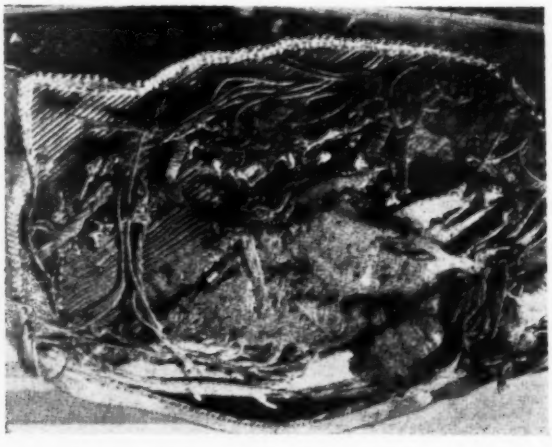
$$\text{Pay load on front axle} = \frac{10 \times 11{,}500}{180} = \frac{115{,}000}{180} = 639 \text{ lbs.}$$

$$\text{Pay load on rear axle} = \frac{170 \times 11{,}500}{180} = \frac{1{,}955{,}000}{180} = 10{,}861 \text{ lbs.}$$

By adding the empty weights for each axle the load distribution is, for the front axle, 4639 lbs. and, for the rear axle,

This Is What High Speed Can Do To Tires





Otis Bradway Says—

"Accept my Free GET ACQUAINTED OFFER!"

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E want more new dairies to test l try Bradway's famous Chocolate vored Syrup for making Non-sep-ting, Non-Settling Chocolate Milk nk. See for yourself and be con-ced by actual test that Bradway colate has that true flavor and r your customers want. Genuine colate Flavor alone is your best vertiser and gets that profit-able repeat business you are after.

You'll find Bradway's Cold Mix Syrup easy to use, it mixes with milk by hot process or cold process and still produces a finished Chocolate Milk Drink which will not separate or settle out after standing several days. When cold process is used the only equipment needed is a milk can and stirring rod.

The purpose of this introductory offer is to get more dairies acquainted with the high quality of Bradway Non-Separating Chocolate Flavoring for milk. This offer expires midnight March 15, 1948, and is limited to 5 cases per customer. Shipment is made direct from factory only. Mail your order with name of your jobber. *ORDER NOW!*

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ADWAY CHOCOLATE CO., INC.
W CASTLE, INDIANA

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lease enter our trial order for.....cases of Bradway
(6 NO. 10 TINS PER CASE)
-Separating Chocolate Flavored Syrup. I am to receive 2 FREE with each purchase of 4, @ $6.00 per case, f.o.b. New Castle, ana.

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BRADWAY

Chocolate Flavored Syrup

Ask Your JOBBER

You Can't Afford This

TOE-IN

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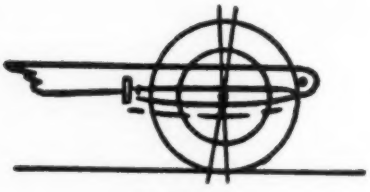

CASTER

SPRUNG OR SAGGING AXLE

BENT FRAME

16,861 lbs. Load per tire is 2320 lbs. on front and 4215 on the rear.

Speed Wears 'Em Down

Speed is a factor in tire life that is hard to over estimate. The difficulty in arriving at logical speeds is due to the variable nature of associated factors. Both road surfaces and atmospheric temperature have a bearing on the rate of tread wear. Some roads appear to be smooth when the surfaces are, in fact, highly abrasive. Slower speeds are the answer to this problem. Summer temperature is another killer that shortens tire life. It is estimated that only about one-half the mileage can be expected from a tire used in all summer driving as can be expected from a tire used in all winter driving.

The damaging effect of speed on a tire is two-fold. High speeds build up heat and also make bruise breaks more severe because the force of impact is greater. Heat leads to ply or tread separation and to "heat blowouts". The cure for all of this is obvious—simply reduce speed. The amazing thing about reducing speed is that it seldom results in a loss of time. It is the old fable of the hare and the tortoise, the old adage that "slow and steady wins the race".

Perhaps one of the best results of a reduction in speed is, from a tire conservation point of view, a tendency to eliminate wheel spinning. Quick stops and starts grind rubber off the tread just about as fast as the folks out in Akron can put it back on. Your driver may think that it is only pebbles and dirt that he scatters over the highway when he tries to move a five ton load from a standstill to forty miles an hour in nothing flat, but the purchasing department and your pocketbook know differently. Woodchucks and contractors are legitimate excavators but not truck drivers, especially drivers whose loads return one cent profit on the dollar.

Are Your Duals Matched

The matching and spacing of dual tires is a common source of trouble among truckers. Improper matching has painful results. Often one of the tires is overloaded because its mate is a smaller size and does not carry its share of the load. If the larger diameter tire happens to be on the inside it will make the outside tire scuff against the road and cause it to wear at an uneven and rapid rate. Overheating, terminating in the inevitable blow-out, is another unpleasant product of improper matching. Conditions that bring about uneven load distribution on dual tires are: (1) a difference in the diameter of the two tires, (2) the amount of air pressure in each tire, (3) the crown or contour of the roads, (4) loose wheel bearings, (5) axle sag. The last two items are mechanical irregularities that must be corrected before any steps are taken to match the tires properly. Otherwise, even very careful matching will probably have little effect on the life of dual tires.

Dual tires should be matched so that both the inside and the outside tires have as close to the same outside diameter and circumference as possible. Occasionally a situation arises wherein it is difficult to match the tires exactly. Tire makers say that it is practical to allow a slight variation in size. This variation should not exceed ¾" in circumference or ¼" in diameter for tires up to 8.25. For tire sizes 9.00 and larger, 1½" differential in circumference or ½" differential in diameter is permissible. When it is necessary to use two tires of a different circumference or outside diameter place the smaller tire on the inside wheel position.

Spacing of dual tires is a process that should receive some attention. If the space between the tires is too small there will be insufficient cooling air between the tires. When

(Please Turn to Page 54)

Challenge This Statement!

You'll increase profits 200% or better with EZE-ORANGE

Doubt our word that you can give your profits a 200% or better boost with EZE-ORANGE?

All right—let us confirm it for you! Look, first, at the experiences of dairies from Maine to California...dairies who report this tangy, all-juice-flavor drink "clicking" month after month. It "belongs" with dairy products—requires minimum investment, shares distribution costs, increases total sales to homes, groceries, restaurants, factories, and schools.

Next, consider EZE-ORANGE's profit potential. It has a rich, ready-made market . . . and it's backed by a complete sales-building program.

Then, write us for samples and detailed information. You'll be convinced . . . you'll see that profits *have* to go up when you've got a money-maker like EZE-ORANGE!

America's fastest-selling dairy fruit drinks!

Every drink in the complete EZE line is pure and fresh. Shipped direct to you—never from stored warehouse stocks.

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WONDER TOOL OF SCIENCE

Electron Microscope Developed by RCA Lights New Thoroughfares of Research for Public Benefit — Views Details Never Before Revealed

By **JACK O'BRINE**
Radio Corporation of America

TINY UNSEEN POWERHOUSES of energy—known to the world of science as electrons—are lighting thoroughfares of research that lead toward a healthier, more gratifying existence for people everywhere.

Scientists of the Radio Corporation of America have put the electrons to this work through development of an electron microscope which, in a short span of years, has brought to man's limited vision direct views and pictures of infinitesimal life and matter that had remained secret throughout the ages.

Revealed with clarity for the first time before the beams of this super searchlight are details of malarial parasites, influenza viruses, syphilis bacteria, viruses of the common cold and action of the new wonder drugs in combating disease. Likewise witnessed and photographed have been great comprehensive glimpses of microscopic chemical particles, and formerly unseen food organisms. In fact, what amounts to whole new realms of investigation have been opened to researchers in medical science and industry.

Two Hundred Thousand Fold

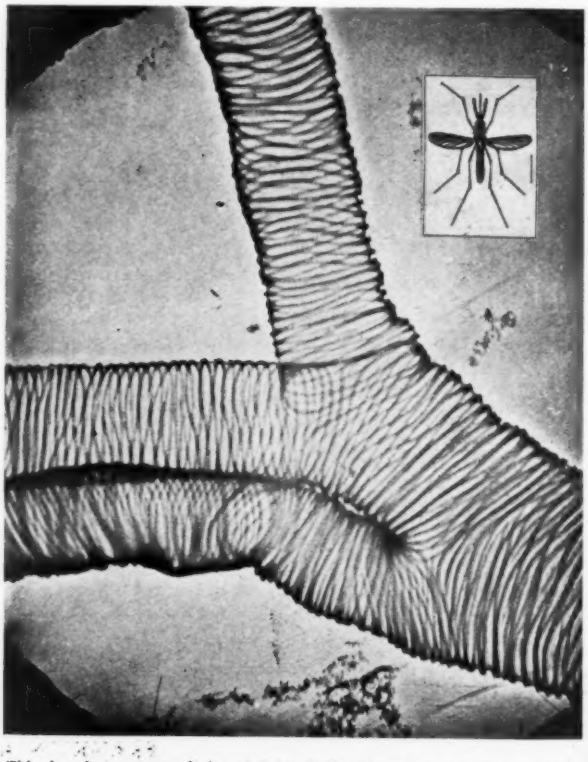
Under the beam of the RCA electron microscope specimens can be magnified more than 200,000 times their actual size. This makes the instrument 100 to 200 times more powerful than the most efficient optical microscope. At that magnification, a man of average size would tower 250 miles into the air!

The electron microscope differs from the optical microscope chiefly in the fact that the specimen to be examined is illuminated by directing a concentrated beam of electrons through it. These electrons, in passing through the specimen, are affected in varying degrees according to the density and composition of various parts of the specimen. When the electron beam emerges from the far side of the specimen it bears the pattern or image of the specimen. Magnification is achieved by magnetic lenses which correspond roughly to the optical lenses in a light microscope.

It was RCA's television research into fields of electron optics that made possible many of the fundamental advances in electron microscopy. It took far-reaching knowledge of the electrons as creators of video images to form a basis for application of the techniques which brought into sight minute particles of matter which scientists had never previously seen. It was at RCA Laboratories, in 1940, that the first

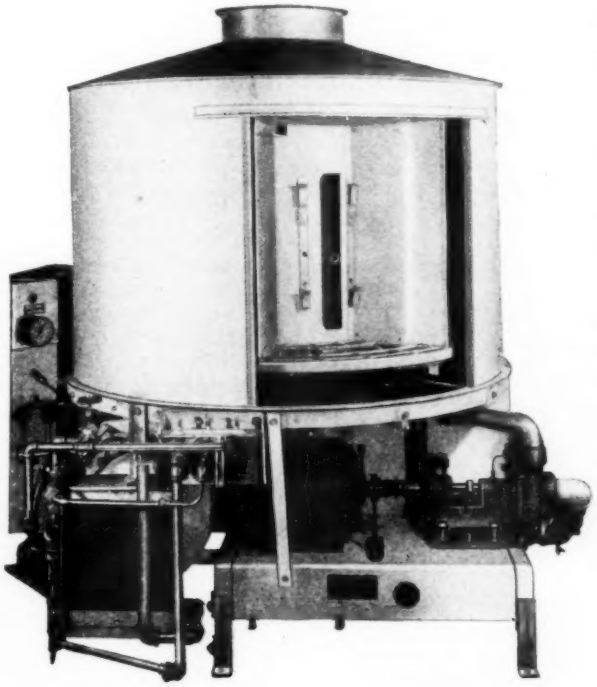
(Please Turn to Page 58)

Food technologists hope that many of the problems in the dairy industry, such as flavor variations, may be mastered through the use of the RCA electron microscope.



This is what a mosquito's windpipe looks like when you get up real close. The smallest structural details are considerably less than one-half millionth of an inch in size.

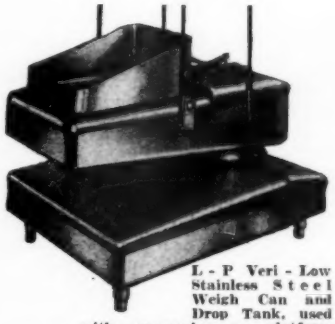
The L-P ROTARY CONSERVATION CAN WASHER



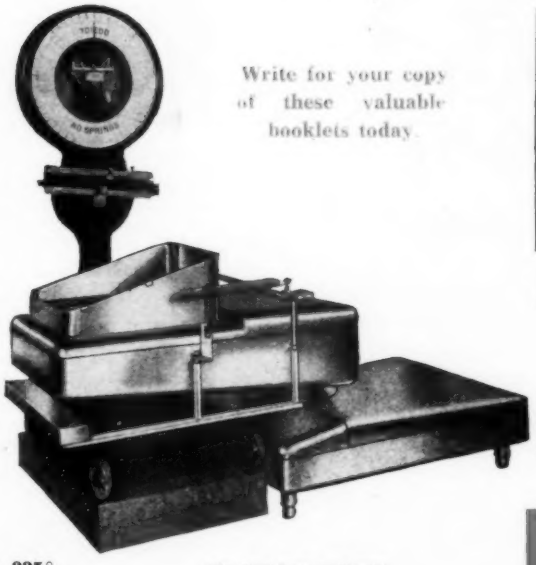
Five operations — rinsing, washing, sterilizing, draining and hot air drying give medium-to-small dairies the same Conservation method and features as the L-P Straightaway Washer which revolutionized can washing in the major U. S. dairy plants at approximately a 50% fuel and water saving.

The effectiveness of sterilizing and washing through the use of Mikro-San and high temperature wash, and rinse waters of 225° or more — the always clean water skimmer action and 250° hot air drying, assure the delivery of sterile, spotless cans and covers — and scaleless lime-free equipment.

A receiving room to be truly up to the minute in efficiency with low operating cost should be planned as a whole. Lathrop-Paulson engineers, with 34 years of close milk plant experience, can give you scientific reasons for the many simplified designs of L-P stainless steel equipment that make each part easier to keep sterile with a minimum of effort.



L-P Veri-Low Stainless Steel Weigh Can and Drop Tank, used with suspension or platform type scale. Dumping height only 35 inches.



The Veri-Low Unit with platform scale. Many features of design and construction are exclusive and covered by L-P patents.

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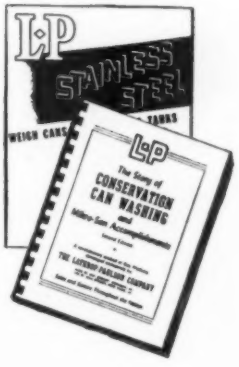

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CONSERVATION CAN WASHERS

FORFEITS LARGEST SURETY BOND

Failure of White Plains Milk Handler Results in Surrender of $20,000 Guarantee — Speedy Action by Surety Company Gives Commissioner Funds 48 Hours After Demand

TWENTY-FIVE NEW YORK STATE milk producers have been paid in full for their November milk after the State Commissioner of Agriculture and Markets ordered the largest forfeiture of a surety bond in New York's 15-year history of milk control.

Checks totaling $27,112.62 were mailed to the producers and a milk marketing pool as Commissioner C. Chester Du Mond invoked the protective feature of the State's milk control act. The major share of the payment resulted from forfeiture of the $20,000 bond which Green Meadow Farms, Inc., White Plains milk handler, had been required to post as a guarantee to its producer-suppliers.

Difference Made Up

The remainder of the fund necessary to make full payment to the dairy farmers and the New York metropolitan milk marketing area pool was provided by a Beacon dealer who received some of the milk as a customer of Green Meadow Farms. Claims of the individual producers against Green Meadow Farms ranged from $239.59 to $3,465.54. The New York market administrator received $355.47.

During November, Green Meadow Farms purchased from producers 452,077 pounds of milk on agreement to pay not less than the uniform price. Approximately half of that milk was trucked directly from the farms to the plant of Emmadine Farms, Inc., at Beacon. The Division of Milk Control has been informed that Emmadine Farms paid Green Meadow Farms in full for all such milk.

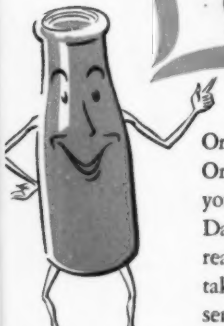
No Delay in Settlement

Early in December the White Plains corporation informed the producers it could not pay them for their miilk. The company furnished them with detailed statements of the amount of milk received and the amount due each for his milk. The producers filed claims with the Commissioner of Agriculture and Markets for reimbursement under the milk control act. Within 48 hours after the demand upon the surety company the amount of the bond was paid in full to the Commissioner.

Emmadine Farms, although it had already paid Green Meadow Farms for its share of the milk, tendered a check for $7,112.62 in order that the dairy farmers could be paid in full.

Green Meadow Farms' default in payments to its milk producers was the 62nd failure out of 9,904 separate bonds or other securities posted with the State Division of Milk Control since 1934.

TRY IT *yourself*



Orangeade made from Mission Dairy Orange will score an instant hit with your customers. Why? Because Mission Dairy Orange has the natural flavor of real California Valencia oranges. Don't take our word for it. Try it yourself—send for a sample today.

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GENERAL BIOCHEMICALS, INC.
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A Two Hundred Mile Run Carries Nature's Most Nearly Perfect Food Over the World's Most Scenic Milk Route in Unique Service

(Special to the American Milk Review)

TENS OF THOUSANDS OF VACATIONISTS spend millions of dollars annually to see what one milk route salesman sees every workday—the wonders of Yosemite National Park, where Borden dairy products are served exclusively. H. D. ("Don") Russell of Borden's Dairy Delivery Company of Fresno, California, has a milk run which truly can be called "the world's most scenic milk route." A veteran of 25 years of mountain driving, Don has been with Borden's for the past five years.

Because of the service, wherever you may stop in Yosemite National Park—at the splendid resort hotels in deep valleys or isolated log cabins in the Sierras more than 10,000 feet above sea level—you will be served dairy products. Until this Spring ice cream was the only milk product handled in the park. Now, milk, cream, cottage cheese and all other dairy products, including processed cheese, are served daily to the thousands who flock to the park from all parts of the continent.

Don Russell, veteran Borden driver, has the undisputed title of running the world's most scenic milk route. Don's truck is shown here at one point in the everyday run.

Miles and Temperature

Don's daily route is a 200-mile trip over mountain roads—and in Summer months the temperature hovers around 110°. But the products always arrive in perfect condition. Each day he pulls out of the Fresno plant of the Borden Dairy Delivery Company in a new-type mechanically refrigerated truck carrying milk and dairy products packaged in special heat and moisture proof fibre cases. He heads out on a highway which climbs up to 6,000 feet above sea level. Even the floor of Yosemite Valley is at a 4,000-foot elevation.

On this run he passes through some of the most picturesque country in the world—through dense forests of pine, silver fir and massive sequoias; through deep-bedded ferns, flowering shrubs and wild flowers that bloom throughout the Summer season.

Out of the forest, he rolls into the rugged cliff country where the highway has been chiseled out of solid granite. He can look down 2,000 feet to the bed of the Merced River which flows through Yosemite. Where the sheer cliffs of hard rock wouldn't permit the chiseling out of a road bed, Don drives through the mile-long Wanona Tunnel. Emerging from this tunnel, the Borden route salesman arrives at Inspiration Point where he views what is without question the most scenic panorama to be found anywhere in the world.

Water falls and Cliffs

Then he winds his way through the floor of the Valley past the massive waterfalls which tumble 2,000 to 3,000 feet down the walls of the cliffs to the Merced River. Don then proceeds into the Old Village where he serves the Old Village Store. Next is the stop at Yosemite Lodge,, the landmark where thousands are served every day in the Summertime. He drives on to Camp Curry which rests below Glacier Point where each evening at nine the spectacular firefall crashes down the cliff.

From Camp Curry he goes to the Ahwahnee Hotel where the accommodations and cuisine are equal to the finest resort hotels of the world. On his way back home, he stops at the Wawona Hotel at Wawona, which rests at an elevation of 5,000 feet in the great Valley. After this stop he wends his way back to Fresno. Though this completes the trip for Don, it's far from the end of the journey for Borden's milk and dairy products.

Many of these dairy products, after reaching the park's commissary, are repacked in trucks and hauled many miles to camps about 10,000 feet up in the Sierras. Some are then transferred into kayacks or carried by pack trains into still higher areas which can be reached only by trail.

In this way, the park's visitors who take horseback trips from Yosemite Valley to the highest points in the Sierras, become strong dairy product fans. They are fed in log cabins which are placed at progressive elevations. The vacationist breakfasts at one camp, lunches at another and finds dinner and overnight accommodations at a third. Some of these trips take four to five days to complete by pack trains, and yet each of the camps the vacationists visits, has fresh and deliciously cool Borden products ready to be served.

BRITISH STUDY DRY MILK

High Pre-heating Temperature and Addition of Ethyl Gallate Found to Increase Storage Life of Full Cream Milk Powder Up to Eight Fold

(By the "Review's" Glasgow Correspondent)

THE GREAT IMPETUS GIVEN TO the consumption of milk powder by the war is reflected in research work being carried out at the Hanah Dairy Research Institute in England. A report covering explorations in this field of dairy enterprise for the last four years was recently published by the Institute.

The wartime popularity of powders has carried over into England's peacetime economy. With the erection of extensive plants for manufacturing powder the need for a satisfactory hygienic standard of production has developed. According to the report, a considerable amount of progress has been made in setting up standards as well as improving techniques and processes in the manufacture of milk powder.

Much of the work was carried on cooperatively with Australian scientists and with the powder industry in England. Specific improvement in the plate count method was reported. The improvement was the result of reconstituting dried milk at 50 degrees C. instead of at room temperature, and by incubating the plates at 30 degrees C. as well as at 37 degrees C.

One of the problems involved in applying the results of plate count tests to the assessment of original conditions surrounding production of a powder is, however, the fact that the number of viable organisms may decrease during storage. In a preliminary study of this subject extremely variable results were encountered; some powders showed a marked reduction in count on storage; others showed little or no significant change. It was felt that these variable results might be associated with differences in the moisture content of the powders, since it has been shown in another field of work that humidity (and therefore moisture content) can markedly affect the viability of bacteria. The value of simple dye reduction tests, such as those employed in assessing the quality of liquid milk, has also been investigated, but they have in general been found unsuitable when applied to reconstituted milk powders.

High Pre-heating Temperatures

The application of bacteriological tests commercially produced powders was used in a cooperative study on the effect of a high pre-heating temperature on the quality of the resulting product. This study showed clearly that, with poor quality raw milk, the raising of the pre-heating temperature to 190 degrees F. materially lowered the plate count of the resulting product. Still more significant, it was found that, as compared with the results obtained in an earlier survey in 1936, tests on powders derived from eight commercial plants showed a very marked improvement in bacteriological quality—a finding which can probably be attributed to the joint effects of the adoption of more careful methods of plant operation and of the introduction of higher pre-heating temperatures.

One further important aspect of the bacteriology of dried milks has been explored. It has been alleged that the keeping quality of such milks, after reconstitution into liquid form, is exceptionally poor. An extensive series of tests carried out with over 200 samples of spray-dried milks has failed to confirm this view, while information gained overseas indicates that in at least one center it was a common practice to reconstitute and bottle the milk before sale. Nevertheless, much of the value of milk powder lies in the ease with which it can be reconstituted as required, while the numbers of bacteria in the freshly reconstituted product are usually lower than those of average quality raw milk. The holding of milk after reconstitution should, therefore, be quite unnecessary.

Prevent Chemical Deterioration

Apart from the maintenance of a high standard of bacteriological quality, it is important that steps should be taken to avoid conditions which will allow the development of chemical deterioration in any form while milk powder is in storage. The two major factors liable to cause deterioration are the presence of oxygen and a high moisture content in the powder. Unless special precautions are taken, the storage of milk powder results in the development of an offensive tallowy flavour, a defect which is due to the oxidation of the milk fat. This is confined almost exclusively to full-cream dried milks. Two methods are known for preventing the defect, i.e., blocking and inert gas packing. The former has been only used on a 'pilot' scale which included however, the consignment of sample batches from Australia, where parallel experiments had been in progress. The latter was applied, and is still being used, on a full commercial scale by the industry.

Other Methods Found Effective

Two further methods have been developed for counteracting the defect of tallowy flavor. The first, which was planned and tested on a cooperative basis, was the use of a high pre-heating temperature during manufacture of the powder. The results showed that, by employing a pre-heating temperature of 190 degrees F., a powder could be produced which was capable of storage without deterioration for from three to five times as long as powders preheated to lower temperatures. This simple expedient was so successful that it was, with the goodwill of the Ministry of Food, very widely adopted throughout the industry during the later war years.

A high pre-heating temperature does, however, inevitably, result in the production of a slightly 'cooked' or 'heated' flavour in the powder and in the resulting reconstituted milk. Earlier work at the Institute had shown that the addition of an antioxidant retarded the development of tallowiness, but at that time no effective innocuous antioxidant was available for use. A wide variety of antioxidants has since been tried out, of which absorbic acid and particularly ethyl gallate have been found to be eminently satisfactory. Indeed, an addition of only seven parts of the latter in 10,000 parts of dried milk was found to increase the storage life at least three-fold. By combining the addition of ethyl gallate with a high pre-heating temperature, the storage life was increased eight-fold, a result comparable to that obtained with gas-packing.

Solution Reached

The above cooperative experiments have solved the problem of storing full-cream milk powder, and the variety of methods now available should enable powders to be rendered palatable for periods ranging from eighteen months to five years or more, depending on the method of combination of methods used. At the present time, the Public Health

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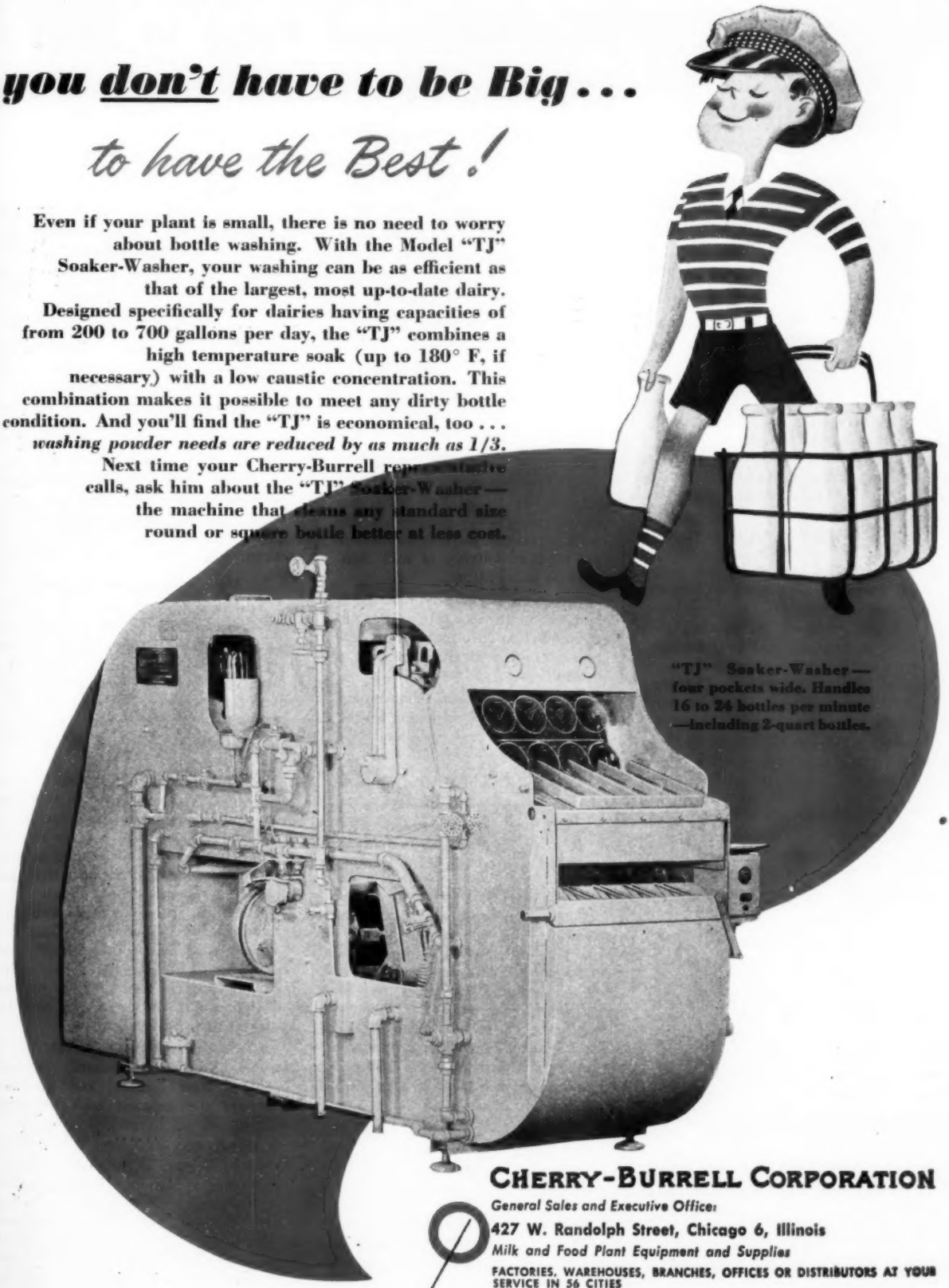

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Regulations prevent ethyl gallate from being used as an antioxidant on a commercial basis.

It has long been known that an abnormally high moisture content in milk powders leads to the development of a stale or 'gummy' flavour and to progressive insolubility; the the factors controlling the latter were largely worked out at the Institute as long as fifteen years ago.

Loss of Nutritive Value

Within the last four years, a new aspect of this form of deterioration has come to light; i.e., a progressive loss in the nutritive value of the powder. The subsequent development of work on this subject provides an excellent illustration of the value of cooperative effort. By arrangement with workers at Cambridge and Reading, a large scale trial was initiated with powders of widely varying moisture contents stored at widely varying temperatures. At the Institute the powders were examined for solubility and it was found that a proportion of the lactose had combined with the milk protein. From work at Cambridge it appeared that this combination was due to a reaction betwen the lactose and certain specific groups of the lysine residues. Rat-feeding experiments at Reading and microbiological assays carried out commercially confirmed the view that it was, in fact, the lysine which was affected by moist storage and that the observant loss in nutritive value could be attributed to this cause. An extensive paper describing in detail these and certain related findings is at present in the press. Work on other aspects of the effects of moisture content on milk powders including the examination of the insoluble fraction of fresh and stored powders and the correlation of various methods of estimating insolubility is in progress.

Tea Mixtures Studied

During the war period a variety of problems were investigated at the Institute. These investigations include the preparation of the combined tea-sugar-milk powder mixtures which were ultimatly supplied in large bulk to the Armed Services. While the formulation of such mixtures was based largely on empirical tests, the work involved considerable fundamental work on such problems as the production of satisfactory miscibility and the moisture exchange relations between the individual constituents. Latterly, this work was extended to include a study of the feasibility of producing tealeaf-less powders, which would be suitable for consumption in either liquid or solid form. Such a product would constitute a far more valuable emergency ration than the original leafy powder.

High Nutritional Value In Skim Reported by Canadian Study Group

Royal Commission's Respect for Milk "Goes Up" as Study Links Milk Consumption with Achievement

SKIM MILK HAS A HIGH nutritional value and may be safely used as an inexpensive substitute for whole milk and cream in the feeding of children, providing cheaper forms of Vitamin A and fats are used to augment their diet.

In statements made before the Ontario Royal Commission on Milk, Dr. F. F. Tisdall, staff member of the Toronto Hospital for Sick Children and widely known nutrition expert, pointed out that skim milk was often prescribed for children suffering from digestive trouble.

SUNDAY MILK IN CANADA

Kitchener, Ontario—With the city solicitor advising such a by-law would be invalid, city council this week rejected a request from seven dairies that delivery of milk Sundays be made illegal.

Alderman Donald Weber, legislation committee chairman said the city solicitor informed him "We have no authority to enact such a by-law."

It was pointed out that in another Ontario city a similar by-law had been contested by a dairy not included in the agreement and had been ruled invalid.

Fat Least Valuable

Fat content in milk is not of tremendous value, and as long as it can be replaced by other, cheaper forms of fat and Vitamin A, skim milk would provide the other necessary nutritives, the hearing learned. For instance, Vitamin A is lost when the fat is skimmed from milk, but the average diner receives only 650 units of Vitamin A from 16 ounces of milk compared with 12,000 units from a helping of carrots.

In answer to questions from Mr. Beverley Matthews, commission counsel, Dr. Tisdall stated: "If we run across digestive trouble in children the first thing we look for is fat as the cause, and nutritionists throughout Canada will not use whole milk; they use whole milk with some of the fat taken off, say three per cent. down to two per cent., and if you have a baby that is having digestive upsets very frequently the procedure is to reduce the fat content."

It was also learned that due to the fact that the dairy industry today values milk by its butter fat content, skim milk, therefore, was priced lower than whole milk and cream. Price of skim milk in Toronto is 13 cents a quart.

In describing the composition of milk, Dr. Tisdall said: "Milk contains approximately 3½ per cent. fat, approximately 4 per cent. carbohydrates or milk sugar, and about 3½ per cent protein. In addition, it contains a large number of vitamins and practically all the minerals essential for life with the exception of iron and perhaps iodine, depending on the pasture. It is the most perfect single food we have today. There is no other single food that contains as many nutrients essential to life as does milk.

Milk Commands Respect

"Now, we want to know if all these nutrients can be replaced by other food sources, because if they can be replaced and replaced economically, then milk is not on any pinnacle, because we could simply take perhaps three or four other foods and replace it, but I would say from our studies, our respect for milk goes up."

Dr. Tisdall pointed out that in countries where milk consumption was high, the accomplishments of the citizens were also high. "If you take a table showing the per capita milk consumption of countries of the world and opposite that table place the accomplishments of those countries, the position they occupy in world affairs, and also the figures of longevity with respect to those countries, you will find a very distinct correlation, because in the countries that are the higher milk consumers we have the leaders in the world today.

Canada, United States, Great Britain, Norway, Sweden, Denmark, Holland, Germany, New Zealand and Australia, those are the greatest milk-consuming countries today," he said.

Evidence was also given by Dr. Lionel B. Pett, Director, Division of Nutrition, Department of National Health and Welfare, Ottawa. He described as "unfortunate" the trend toward evaluating milk by its butter fat content. "In medical practice, particularly in the early ages of children, a good deal of harm may be done by milk of too high a butter fat content. This can carry through into a fairly old age group," Dr. Pett stated.

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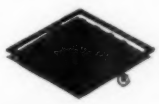

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OHIO D.P.A. CONVENTION

Thirty-first Annual Meeting of Buckeye Dairymen Sees Butter as Key to Industry's Future — More Than Seven Hundred Attend Three Day Affair

(By a Review Staff Representative)

DESPITE SUB-ZERO temperature, more than 700 dairymen braved a bitter cold spell to hear an impressive group of speakers discuss the major problems of the industry at the Thirty-first Annual Convention of the Ohio Dairy Products Association held at the Deshler-Wallick Hotel in Columbus January 26-28. Presided over by R. H. McFadden of Canton, the convention brought home to members of the industry the vital necessity for inter-industry cooperation and the great need for a recognition of the public responsibility that participation in the industry entails.

With registration red tape reduced to a minimum through the careful planning of O. E. Anderson, Association Secretary, and his staff, the Convention got off to a fast start and never lagged. Well attended meetings and a contagious enthusiasm characterized by an eagerness to learn was the stimulating background of the gathering. For extra-curricula activity the Ohio Dairy Boosters provided a first rate program of entertainment.

Butter Crucial Problem

As the convention developed it became apparent that the inroads made on the butter industry by high prices and cream shortages constituted an outstanding problem affecting the entire industry. W. A. Gorden, Editor of the *Dairy Record*, typified the sentiment when he declared that "Unless leaders in the dairy industry soon learn the lesson that each branch of dairying is directly dependent upon the other, changing economic conditions of the future may result in chaotic problems." The St. Paul, Minnesota journalist deplored the "intense competition" between various branches of the dairy industry. This competition, Mr. Gordon said, is the result of "almost unlimited demand coupled with shortages of supply".

N. R. Baker, Manager of Fairmont Foods Company of Columbus, reinforced Gordon's position. "A sudden change in the nation's economic condition, which would bring a sharp drop in the demand for fluid milk, cheese, ice cream and other products, would throw a tremendous burden on the butter industry," the speaker said. Baker stated that the butter industry's facilities were "far more limited" today than at any time in the last quarter century. He declared that many manufacturers had turned their energies into other fields in the face of war-time restrictions and "other conditions". The danger, according to the Columbus food merchant, was in the unpreparedness and present inability of the butter industry to take up the surplus that would be created by a sharp readjustment in economic conditions. Mr. Baker urged the entire industry to join in rebuilding a strong butter market as a safeguard against future excess supplies.

Must Keep Costs Down

Other speakers reflected this crucial butter problem. "Butter manufacturers in many sections of the nation are striving for new ideas in cream procurement in order to cut down costs," was the statement of Ray Alberts, field director for the American Butter Institute. "Buyers are using limited buying days, field receiving stations for cream assembly and cooling, and co-operative hauling in their efforts to modernize that phase of the butter business", the speaker declared.

Paul Potter, labor relations specialist of Chicago said "Amen" to Alberts' statement and pointed out that "Butter manufacturers are finding it more important than ever before to make frequent analyses of their costs of production and marketing."

Although there was an undertone of oleo resentment circulating through the convention, the negative attitude that has hampered straight thinking on the butter problem was pleasantly absent. The oleo legislative picture was presented by Rep. William H. Manahan of Defiance, a member of the Ohio legislature, who saw the butter-oleo controversy as whether or not oleo should be sold on its own merits or should trade on the good name built up by butter. "The oleo manufacturers wish to color their product to imitate butter as closely as possible" the legislator said. Manahan told dairymen that an intelligent public relations program would be the best method of clearing up the confusion in the public mind on the issue of butter *vs.* oleo.

Second only to the butter problem was public relations. Convention thinking was along the lines of quality as the best possible ambassador of goodwill that the industry could have. Hugh F. Hutchinson of Lewisburg, West Virginia, discussed public relations in the ice cream industry and said, "No other branch of the dairy industry has as many opportunities for good public relations as does the ice cream field". Other speakers saw the main opportunity in the realm of sanitary control and standards of excellence. A Memphis, Tennessee dairyman, Hubert Garrecht, participating in a panel discussion, declared, "it should be the constant aim of the fluid milk distributor to supply milk to the consumer in the container and by the system which is most economical, consistent with quality and sanitary standards". R. B. Burr of Supplee-Wills-Jones Company of Philadelphia pointed out that driver salesmen are the most numerous members of a company's staff in contact with the public. He advised that in the systematic training of these men was an excellent opportunity to develop both employee and consumer goodwill.

New Officers Elected

Officers of the Association elected prior to the convention were R. H. McFadden Canton Milk Company, Canton; President; J. B. Pentz, Borden's Moores and Ross, Columbus, Treasurer; O. E. Anderson, Columbus, Executive Secretary; R. A. Larson, Columbus, Associate Secretary. Trustees include L. S. Holler, Telling-Belle Vernon Milk Company, Cleveland, R. A. Lamont, Jr., Supreme Dairy Company, Alliance, Harry Kommins, White Mountain Creamery Company, New Bremen, P. E. Bacon, London Creamery Company, London, O. W. Landrum, Cudahy Packing Company, Washington Court House, R. W. Gillam, Cottage Creamery Company, Orrville, A. J. Good, Pickerington Creamery Company, Pickerington, Irving Koch, Borden's Dairy and Ice Cream Company, Columbus, C. T. Alexander, M. & R. Laboratories, Inc., Columbus, H. F. Meyer, Meyer Dairy Products Company, Cleveland, William Funke, Hyde Park Dairy Company, Cincinnati, R. H. McFadden, Canton Sanitary Milk Company, Canton, L. J. Spellerberg, Chief Dairy Products Company, Upper Sandusky and Professor R. B. Stoltz, Ohio State University, Honorary Member.

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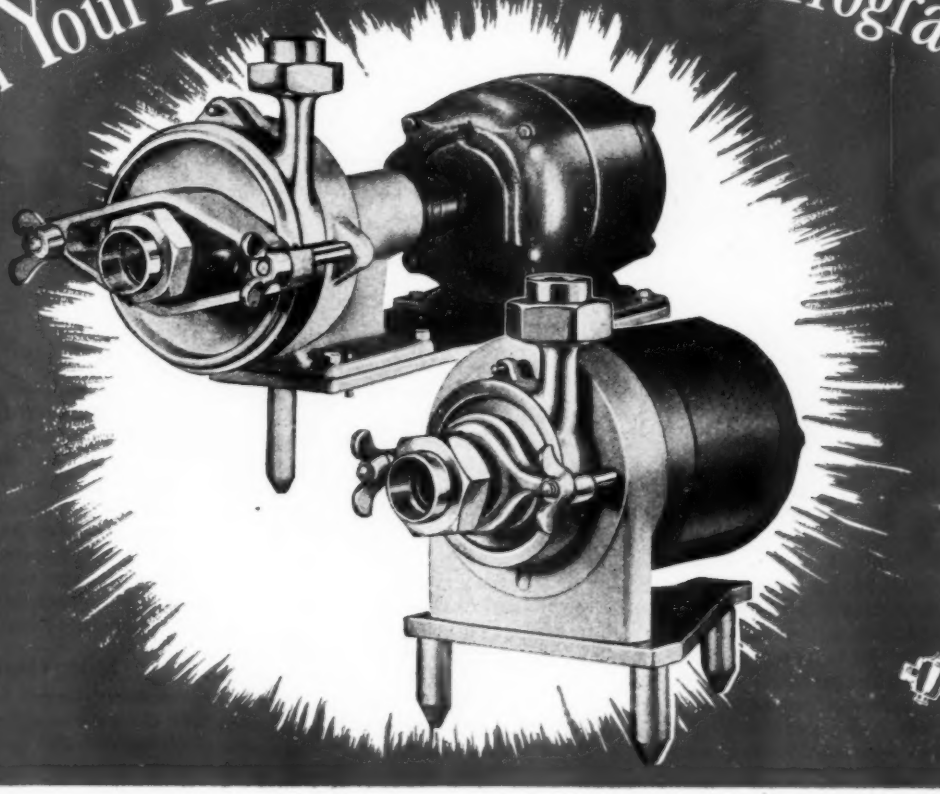

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ALAN TOBIE
Winner of the 1947 DISA Scholarship

CONNECTICUT C

IF THE WORLD OPERATED ACCORDING to logic then the best collegiate dairy products judging teams should come from Wisconsin, Iowa and New York. As a matter of fact the boys from the great dairy states have captured their share of honors in the field of butter tubs and prime daisies. Yet, if one examines the record book, one notes, with perhaps a little surprise, that the 1947 winner of two out of the three major national judging competitions comes from Connecticut. Over a period of years, this team that has consistently been among the top three teams in the country. There must be a reason for such a performance. There is. The reason is E. O. Anderson and L. R. Dowd, co-coaches of the team and members of the Dairy Department at the University.

Inter-collegiate judging of dairy products is not a minor league affair. Some of the best known names in the industry have been connected with the development of this phase of student training. Likewise, some of the present leaders in the dairy business were members of college judging teams. An outstanding feature of the Dairy Industry Exposition is the Collegiate Students International Contest in Judging Dairy Products sponsored by the Dairy Industries Supply Association and the American Dairy Science Association. The contest is under the direct supervision of the Bureau of Dairy Industry of the Department of Agriculture. A member of the bureau is the superintendent of the contest.

A judging contest, as its name implies, is a competition designed to test the abilities of the contestants as judges. In dairy products competition the four leading products, milk, butter, cheese, and ice cream are judged. Carefully worked out rules govern the contest. These rules, prepared by a committee of leading dairy teachers, headed by Professor M. C. Trout of Michigan State College, were originally intended for the International Contest but they proved to be so fundamental that they have been adopted by other contests as well. They are the nearest approach to an official rule book that there is.

Strict Eligibility Rules

A team consists of three undergraduate students at a land grant State agricultural college or similar institution. No ringers are allowed; the rules are definite on this point. Contestants are not eligible who have acted as official judges of dairy products or who have taught the manufacture of or the judging of dairy products. Ordinarily teams are made up of men. Pretty milk maids went out when milking machines and commercial dairying came in. The most recent International Contest, however, was startled out of its traditional masculinity when two young ladies, one from Connecticut and one from Cornell, participated in the judging and walked off with top honors.

The machanics of a dairy products judging contest are simple. A series of products are pre-judged by a board of experts. The products are then scored by the contestants and the individual whose scoring most nearly corresponds to the official judgment is the winner. Each sample is rated from best to poorest and the reason for the rating is given. For example, there may be ten samples of butter. The relationship of the samples is determined by the board of judges. The team representatives are turned loose among the samples and given forty minutes to make their own estimate of the relative virtues of each. One sample may be oxidized or it may be tallowy or it may have a "cooked" flavor. The contestant rates the sample as No. 1, or

E. O. Anderson, one of Connecticut's pair of able coaches, starts team members Alan Tobie and Don Martin off on a practice session. Students were impressed with wide variations in milk quality encountered during their Miami trip.

CHAMPIONS

EVELYN FISH
First feminine member of the team

No. 2 or whatever his or her judgment indicates. In addition, the tallowy or cooked flavor or oxidized flavor are cited as the reason for marking the sample down. The degree of variation from the judgment of the board is the basis for determining the best judge. If the judgement of a student coincides exactly with the judgment of the experts then he gets zero, which is a perfect score. If, however, a student should grade flavor 35 on a particular sample and the official grade had it at 37 then the student gets a score 2 points against him. A contestant's grade on a sample is the sum of his grades of "score" and "criticism" of that sample. Team grades are the sum of the grades of its members. The Team All Products standing is the sum of the team grades in each product.

At Miami Beach last fall, where the International Contest was held, the University of Connecticut team took first place in All Products, first in butter, seventh in cheese, first in milk, and second in ice cream. The standing of individual members of the Connecticut team was equally remarkable. Eight times out of a possible fifteen the Nutmeggers were in one of the first ten places. Fifty-seven students took part in the contest, and, with the exception of cheese where they had a bad time, there were only two occasions when the Connecticut people were out of the first fifteen.

The Connecticut team has a background as interesting as their triumphs are spectacular. In the person of Evelyn Fish they have one of the first girls ever to participate in an International Student Judging Contest. Alan Tobie, winner of the butter judging at Miami, and selected as the recipient of the coveted DISA Scholarship, is the son of a Meridan banker. Donald Martin, who lists milk as his best product, is a farm boy with a flair for dairying. The alternate is Jules Staralitz who comes from the heart of metropolitan New York.

If one were a philosopher one might ponder on the universal character of the product that brought together four people from such diverse backgrounds.

More valuable than their origins or their judging conquests are the views held by these young people on the industry in which they intend to work. They are sold on the dairy business. They see in the industry an opportunity for growth and achievement. Said Tobie, a tall able veteran, "It's a business just like any other enterprise and needs modern methods of merchandising, advertising and promotion if it is to progress." All four students expressed a healthy concern over the future of the industry. Donald Martin feels that there is a real danger in over regulation, an attitude that will find plenty of company within the industry. Tobie sees regulation as the manifestation of the high position that the industry occupies in society. "It is really a sort of public utility. If you happen to be a public utility you've got to expect regulation." "Of course," Tobie added "the best way is regulation by the industry itself." Evelyn Fish, who comes from a dairying family, feels that the wide variation in the standard of dairy products is a problem that needs attention. During the course of the Miami trip Miss Fish said that she noted a great difference in milk. "Some of it tasted like salt water" she said, "And most of it wouldn't be allowed to reach the market in Connecticut."

Intercollegiate judging has not progressed as far along the competitive road

(Please turn to Page 68)

Large part of team's success is due to constant work. Here Co-coach L. E. Dowd goes over some ice cream samples with Evelyn Fish, runner-up at Miami in All Products, and Jules Starlawitz, alternate member of the team.

COLUMBUS MEANS BUSINESS

Action Is a Characteristic that Has Made the Columbus Milk Distributors Association One of the Best Dealer Organizations in the United States

HOW WOULD YOU LIKE to operate in a market where healthy competition without ruinous price cutting is standard practice? How would you like to set up shop in an area where three day-a-week delivery is enthusiastically endorsed by consumer, driver's union, and milk dealer alike? How would you like to do business where there are no bottle exchange problems and where your stray crates are collected periodically and returned to you almost without charge? Where is it? Shangrila? Nope. It's in Columbus, Ohio. If you need to be convinced ask a member of the Columbus Milk Distributor's Association, because they are the boys who did it.

A good market, like a good business, doesn't just happen, it takes planning, it takes brains, and it takes work. In Columbus, the Milk Distributor's Association is the power that has created conditions which make the market one of the best in the country. The Association was formed in 1930, largely through the activities of Professor R. B. Stoltz of Ohio State University. Every milk dealer in Columbus belongs to the Association which has twenty-five active members on the roster plus three associate members. The organization has an office at 35 East Gay Street and a full time secretary.

Introduced a Universal Bottle

The association has to its credit some extremely practical achievements as well as a number of more difficult, less tangible accomplishments. Perhaps the most prominent fruit of the work which the Distributor's Association has been doing is the universal milk bottle. The bottle is a lightweight square container with a 48 mm opening. No dealer name appears on the bottle, only the initials CMDA. Through this system Columbus dealers have reduced the headaches of bottle return to a minimum. Because of the common nature of the bottles a consumer deposit at retail stores has been eliminated and the customer can return the bottle to any store or any dealer in Columbus. Two or three times each year the Association has found it desirable to conduct a bottle return campaign. In these drives, as in the general return system, there have been extra dividends. Drivers and companies come to appreciate each other and note a distinct absence of horns on the heads of competitors. Housewives learn the ease with which bottles may be returned. And finally, a feeling of goodwill is generated by the operation of a system that finds drivers, dealers, and consumers working together for their mutual benefit.

Some really phenomenal records of bottle life have been made using the universal bottle. One company has an average of fifty-eight trips per bottle. This is an unusual record, although for the association as a whole the trippage runs between 45 and 50 per bottle.

The rules governing the use and ownership of the bottles are set forth in the Association's Rules and Regulations. "Any member in good standing shall have the right to the use of the Association milk bottle known as the 'CMDA MILK BOTTLE', subject to such rules and regulations as the Board of Trustees may, from time to time, adopt concerning the use and acquisition of such bottle, the consideration therefore, and the abuse of privileges granted hereunder."

Dealers do not own the bottles but lease them from the Association. Title and right to possession of all CMDA milk bottles is in the Association. Any member who acquires CMDA bottles except through the Association is required to transfer all rights and interest in the bottles to the Association. Teeth are put into the rules governing the bottles by providing for disciplinary action including expulsion for violators.

WARD K. HOLM

Along with the universal bottle the standard small case was put into general use. The cases, are, of course, branded with owner's name for purposes of identification. Recently the Association adopted a method of collecting and redistributing stray cases. The system is called the Foreign Can and Case Exchange. Once each month a member of the Association sends a truck to pick up every foreign case and can at each of the milk plants in Columbus. The cases and cans are sorted by the dairy that has the duty that month and are returned to the proper owners. A different dairy does the collecting and sorting each month with every member dairy taking its turn. On the basis of membership the duty comes up once in every two years. The savings and efficiency of the service are enormous. Instead of the dairies duplicating each other's efforts in a twenty-five fold repetition, one dairy does the job for everybody. Again, the by-product of cooperation and inter-dealer understanding is a valuable result of the effort. The schedule of who-picks-up-when is determined by lot. The project has been called by Association members "one of the most successful things that we have done."

The idea that "There's always a better way" plays a large part in the thinking of the Association membership. Even before Pearl Harbor provided the stimulus that put many time and labor saving practices into actual use, the dealers in Columbus had embarked on a program to modernize the system of milk deliveries. As one of the members has since observed "From the standpoint of consumer services we have certainly learned that many of our former practices which we called 'service' were little short of nuisances to the housewife". In 1941 the Association adopted a daylight-no Sunday delivery and the lightweight bottle. In May of 1942 every other day delivery was inaugurated and in October 1943 three-day-a-week delivery was put into effect. The square milk bottle and small case were adopted in January of 1945. The Foreign Can and Case Exchange, previously discussed, is the most

(Continued on Page 32)

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50% more potential sales, potential profits without expanding refrigeration facilities! And Handi-Squares' lightweight and squared-off proportions make them easy to handle!

THEIR CUSTOMERS PREFER HANDI-SQUARES, 9 TO 1

Housewives have long preferred milk in glass! They trust glass protection, appreciate glass convenience. *Now* they're voting an emphatic 9 to 1 preference for "squares" in comparison with other glass bottles!

You expand coldroom and storage facilities! Your trucks can carry more milk! Wholesale route time, empty handling time are substantially cut! Change-over cost is quickly absorbed by Handi-Squares' all-around economy . . . and you continue to benefit year after year from the economies Handi-Squares provide!

This space reserved for dairy's name, trade mark or sales message. Let us help you plan ACL for your bottles!

Duraglas HANDI-SQUARE BOTTLES

The trusted protection, unequaled economy of the returnable bottle *plus* new conveniences for the consumer and greater operating efficiency for you.

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

The Public Relations Committee is one of twelve live groups that help make the Milk Distributor's a powerful force in Columbus' dairy industry. Committee members are: Seated, Floyd Thomas, Fairmont Foods Company; Waldo Elliott, Westerville Creamery Company; Walter J. Brodkorb, Pestel Milk Company, Chairman; John W. Dawson, Young's Dairy. Standing, Richard A. Aszling, Borden's; Robert M. Engle, Diamond Milk Products; Ward K. Holm, Secretary CMDA.

recent of the steps in this program of improving delivery techniques.

The present three-day-a-week delivery system is an economy with extensive results. The delivery men like it and so does the union. The routeman has benefited by all the better working conditions and social advantages of daylight and no-Sunday deliveries. The package that he handles is lighter and smaller. Although daily units per truck and per routeman have increased two and three fold his working hours have actually been reduced by 20 per cent while his earnings have more than doubled. A 50 per cent reduction in mileage and gasoline consumption is money in the bank for the consumer. It is estimated that this type of service gives the public milk at two cents a quart less than would otherwise be possible. Furthermore, the consumer gets the milk the same day every week.

When the project was first put into effect it was feared that flavor and keeping quality would be a problem. However, improved products, better storage facilities in the home, and a better understanding of how to handle milk in the home have served to cut the problem down to the point where "any objection on the grounds of keeping quality is more psychological than real". And the dealer benefits too. He can operate his plant fifty-two days a year less. The rate of equipment depreciation is reduced. As a result, in the face of mounting costs, he has been able to maintain the same spread per unit.

The Association maintains a standing Employee Relations Committee. The job of this committee is to keep abreast of labor legislation and provide a source of information to which members of the Association may turn in solving their problems of employee relations. This phase of the Association's work has been of particular value to smaller dealers who do not have the resources to employ a labor relations man. It is not at all unusual for a dealer with a labor problem to call upon the committee for advice and guidance in meeting a specific situation. The committee, which meets regularly, studies the problem and recommends what it considers the best solution.

Extensive Public Relations

In less tangible fields the Distributor's Association has been extremely active. Hardly a problem of consumer relations, dealer relations, or employee relations that this group has not tackled. Pamphlets, news releases, lecturers on civic programs, contests, displays, and the radio have been employed to bring about better relationships between various segments of the public and the industry. The Association took full advantage of June Dairy Month and fashioned its public relations work so that it meshed with the nationwide activities of the larger organizations. Among the more spectacular features of the June program was a Dairy Night at the ball park with a milking contest between members of the Columbus Red Birds. Another stunt deluged local waitresses with five dollar bills. If it was brought to the attention of the Association that a waitress inquired of her customer, during the course of serving a meal, "Will you have a glass of milk?", the lady received five good dollars as a reward. At the State Fair the Association put on a display emphasizing the small part of what people pay for a quart of milk that is the milk handler's profit. In case you haven't figured it out lately it is about one-third of a cent.

Pamphlets have been distributed among dealers, producers, and consumers. Some really excellent brochures have been produced. Part of the material comes from the Milk Industry Foundation and part of it represents work done by members of the Association. *Milk Distributing Costs, E-O-D Delivery Saves You Money,* and the well known booklet, *Milk Facts,* are all *MIF* publications that have been put to good use. *Streamlined Milk Delivery Service-An Economic Necessity, Meals and Budgets Balanced With Milk, Chilling Detective Story,* and *Three-Day-A-Week Delivery* were put out by the Association. Mr. T. Kline Hamilton, Vice-President of the Milk Industry Foundation and an active member of the Association, wrote the two pamphlets on milk delivery. In addition to these pamphlets a series of four leaflets, *Corn Silage, Proper Care to Make Better Milk, Clean Methods Are A Sure Road to Pure Milk,* and *Managed Feeding,* were distributed among producers suppling the Columbus market.

Imponderables Are Important

The Columbus Milk Distributors Association is no featherweight outfit as a review of its accomplishments indicates. It has done much by practical, concrete activity to make Columbus a good market. To many businessmen, the tangible trimuphs of three-day-a-week delivery, the universal bottle, and the can and crate exchange are the most appealing. Yet, as one talks with members of the Association and notes the enthusiasm with which they speak of their organization, notes the responsibility that Columbus dealers feel toward their colleagues and their consumers, one senses that the real contribution of the Association has been in the state of mind it has developed among its members. Milk dealers in Columbus are mature. They have learned that competitors are not evil fellows with horns and hooves; that honest competition within proscribed limits benefits everybody while cut throat activities hurt consumer and dealer alike. Where it is economical and logical, handlers work together, as in the case of the universal bottle

(Please turn to Page 53)

PACKAGE IN PAPER!

The standard six sizes of Pure-Pak cartons. (The two-quart size is packaged on special Junior and Senior models of Pure-Pak machines. Other models for export embody changes to allow packaging of foreign measures—write for information.)

Every month the block-long assembly lines in the mammoth, modern Ex-Cell-O plant turn out Pure-Pak machines of all sizes. They go West—birthplace of the paper milk bottle; East, where it was first universally accepted and used in volume; North, even into Canada; South, and into Mexico. With the five sizes shown above, plus the "Imperial" for British Commonwealth use, Pure-Pak machines meet the needs of dairies of all sizes, everywhere. . . . Greatest advancement in dairying since Pasteurization, the paper milk bottle offers the dairy most, when it's Pure-Pak!

A typical Pure-Pak installation (two Juniors in a Borden's plant)

The Pure-Pak assembly line in the main Ex-Cell-O Detroit plant.

Ex-Cell-O also manufactures Electro-Pure all-electric Pasteurizers and Pure-Pak Ice Cream Packaging machines.

Pure-Pak Division EX-CELL-O CORP. Established in 1919 **Detroit 6**

Please send information on Pure-Pak Model_____

Name_____

Address_____

HOW TO GET CANS CLEAN

By **VIRGIL SCHWARZKOPF**

Vice-President, The Lathrop-Paulson Company

CLEAN CANS AID in preserving the natural flavor and high quality of all dairy products. They also exert a definite psychological influence on the producer as it is a concrete means of informing him that the dairy plant's quality program is a living thing.

Before we discuss "How To Get Cans Clean" it may be well to reach a common understanding as to what a clean can is.

The laboratory standard calls for a physical clean, dry can, smooth surface free from rust, with bacteria content less than one bacteria per C.C. of container or less than 40,000 total count in a 10 gallon can. This standard is quite acceptable but we cannot readily make a bacteria determination on every can.

Therefore, it seems advisable to find a practical standard for clean cans, one that the plant operator can utilize daily for instantaneous inspection. Such a standard may be as follows:

Cans must:

1. *Look Clean*
2. *Feel Clean*
3. *Smell Clean*
4. *Feel Dry*
5. *Look Dry*
6. *Must be very hot in fact practically too hot to handle*

Cans coming from the washer in this condition are quite generally low in bacteria.

This question arises as to "How can we get that type of clean can day in and day out throughout the year?" To get clean cans we must find that method of cleaning which will most completely and economically accomplish the following:

1. *Remove the soil or bacteria food from the can*
2. *Remove or destroy the bacteria present*
3. *Remove the moisture from the can*
4. *Protect the tin coating*
5. *Prevent the deposition of water or milk stone*
6. *Keep can relatively free from residual alkali*

Every stop in the cleaning process should contribute to one or more of these objectives.

Responsibility

The most positive way to get cans clean is to make some one definitely responsible for this important job. Satisfactory results largely depend upon how well this responsibility is placed and assumed. When responsibility is ignored deterioration makes rapid progress because neglect accelerates this hazard many fold. A careless, inefficient operator will be the most expensive person that can be employed in this capacity, regardless of what the wage may be.

The life of a machine and the type of work it produces is largely dependent on the care it receives.

Therefore, one of the most important requisites to get cans clean is to assign a first class, competent operator who will take pride in his work and be willing to assume the responsibility of operating the can washer as directed to produce clean, dry, commercially sterile cans.

The operator can readily accomplish these results by following a few simple practices:

1. Keep the machine clean, well groomed and lubricated.

A casual inspection of the machine will almost always reveal the type of can being turned out. Any machine that is coated with lime, scale, filth, dirt, etc., hardly can be expected to deliver a clean can. Each day clean the pipes, tanks, pans, frame, cover replacer etc.

Spend a few minutes each day in caring for the machine and it will give excellent service for many years at reasonable cost.

2. Maintain optimum temperatures for washing, rinsing, sterilizing and drying.

Know your machine. Know what temperature will give the best can and maintain these temperatures during the can cleaning operation.

Constant temperatures are important. Variable temperatures give variable results. Suitable steam and water supply at reasonable constant pressures are helpful in holding the desired temperatures for the various treatments.

3. Maintain proper strength solutions for good cleaning purposes. Don't destroy the cleaning agent by alternating one type of cleaner with another.

The selection of the type of cleaner to use will be discussed later.

4. Keep machine in good operating condition. This is relatively easy. Certainly it is not difficult if a few details are given attention each day. Keeping the machine clean is the biggest single factor. Next is keeping it well groomed and lubricated. When this is done about all that remains to be taken care of is to observe the performance of the machine each day to see that every part functions properly.

Use Can With "Windows"

One of the simplest and best ways to do this is to run an open can or a can with "windows" in it through the machine to check the operation of each wash, rinse or sterilizing jet. Place can and cover in machine, and start motors to move can forward to first treatment which is the pre-rinse. Stop machine at that point to observe the effectiveness of this treatment. The water should thoroughly cover the entire interior of the can to remove fluid milk.

If adjustments are necessary, make them and move can forward to next treatment, which, in most cases, is the application of the solution. Again stop the machine and observe the effectiveness of the application of the solution; be sure proper temperature is maintained.

By following the can through the machine, observing the treatments, and making whatever adjustments may be necessary the machine can be kept at peak condition for performance each day. The check-up should not require more than a few minutes and is well worthwhile.

Again may I repeat that someone must be given the responsibility to see that the machine is properly operated and

cared for. If this responsibility is neglected you will sooner or later find the cans quite unsatisfactory.

Handling Cans from Farm to Plant

The manner in which the cans are handled on the farm, in transit to the plant, and in the receiving room materially affects the problem of getting clean cans. If the cans are handled carelessly on the farm and in transit they will probably arrive at the plant heavily coated with dust, dirt, mud and in fact with all types of farm litter. Such cans must of necessity receive more than ordinary routine treatment to get them clean. If cans arriving at the plant are in this condition they should be washed and treated to remove all loose soil and drainable moisture before the milk is poured from the can. Otherwise excess foreign matter may get into the milk and if this heavy load of extraneous matter is carried by the cans into the can washer more difficulties may be encountered. The wash solution will soon become useless for good cleaning operation because of the concentration of soil, manure, bacteria and other material. The spray nozzles may in time clog and further reduce the cleansing efficiency.

It is not uncommon to find the incoming and outgoing conveyor lines in the receiving room contributing to unclean condition of the cans. Accumulation of soil or the addition of excess oil on the drag chain usually provides a sure means of smearing the bottom chimes of the cans with grease and dirt which adds to the problem of getting the cans clean. The operator also finds this smearing quite objectionable because it gets on his hands, records, and in fact everything he handles. This can be avoided by keeping the conveyor chain clean and well groomed, with the proper use of suitable accessories available for that purpose.

The dumping of the milk from the can into the weigh can also has a material bearing on the can cleaning problem as well as on economical operation. Too often the man who is given the responsibility of dumping and weighing the milk is not given full information on just how to proceed to facilitate the washing of the can and at the same time avoid heavy loss of milk.

When the can is inverted allow sufficient time for the milk to drain before placing it in the washer. If the can is inverted and immediately moved forward into the washer much milk will be lost and the problem of getting clean cans becomes more difficult. Remember our first job is to completely remove the food from the can. Therefore, good drainage is important.

Pre-Rinsing

After the can enters the washer it should be flushed with a rather liberal amount of water to expedite the drainage and removal of fluid milk. The importance of this operation should not be overlooked. Unless the can is thoroughly flushed it may carry a heavy load of milk fats and solids to the wash solution which creates a number of unnecessary problems.

Following the rinsing, the cans move to the wash position where they should receive most thorough treatment to remove the soil and the bacteria without the deposition of scale or the removal of the tin coating.

The washer which is available in the average plant for washing is seldom a good cleaning medium without refining or the addition of cleaning agents.

The selection of the material for treating the water to make it suitable for cleaning is of prime importance. To make an intelligent selection many factors must be given careful consideration. It is important to select products which will accomplish the desired results most economically. Therefore, you should know its:

1. *Reaction with water hardness*
2. *Reaction with milk solids and milk fats*

Sure I Make More on Quality Products

You're right, Mr. Dairy Plant Operator, and your problem can be solved. Here's a means—available now—for increasing your supply of high quality milk. Enlist the LO-BAX "PMQ" program—get more of your producers to do a good sanitizing job.

Let the "PMQ" program help you explain to your producers how and why they should use a chlorine rinse regularly. Everything is in readiness—there are compelling LO-BAX letters and folders for enclosing with milk checks, attractive LO-BAX posters, milk house instruction cards, booklets on milk sanitation—all are free to plants handling LO-BAX. Strong additional help for you is provided by LO-BAX farm paper and radio advertising—greatly expanded this year.

Have a look at the LO-BAX plan and see if you don't agree that it can help you to more profits, greater volume and a stronger competitive position. Write The Mathieson Alkali Works (Inc.), 60 East 42nd Street, New York 17, N. Y.

LO-BAX 50% AVAILABLE CHLORINE

A HIGHLY EFFICIENT CHLORINE BACTERICIDE

- EASY TO HANDLE AND USE
- A FAST KILLER
- STABLE (doesn't lose strength)
- GIVES CLEAR DAIRY RINSE SOLUTIONS
- READILY DISSOLVING
- HARMLESS TO COWS' UDDERS AND MILKERS' HANDS

PMQ
PROTECT MILK QUALITY

Mathieson
LO-BAX

Lo-Bax . . . Super Nufos . . . HTH-15 . . . Dry Ice
Carbonic Gas . . . Ammonia, Anhydrous & Aqua
Caustic Soda . . . Soda Ash . . . Bicarbonate of Soda
Liquid Chlorine . . . Chlorine Dioxide . . . PH-Plus
Sodium Chlorite Products . . . Sodium Methylate

Here is the ideal case for those big ½ gallons — 6 bottle pockets with 2 swing type bottle supports and 4 angle type ties for rod security — constructed by Baker to withstand years of rough usage.

Baker's dual assembly line produces a continuous flow of cases from ½ pints to ½ gallons.

BAKER BOX INC.
WORCESTER 8, MASS.
Mastercraftsmen Since 1855

3. *Optimum temperature–(That temperature at which it will be most effective in treating the water and removing soil, butter-fat and other milk solids.)*
4. *Critical temperature–(That temperature at which it will cease to be a cleaner and become a film or scale former. That is, can it be used for treating the rinse water when heated to sterilizing temperatures near the boiling point. Never reach or exceed the critical temperature of any compound.) Will this temperature provide adequate sterilization?*
5. *Rinsing characteristics–How tenaciously will it cling to the can? How much time will be required to thoroughly rinse or drain the can so that a minimum of residue remains?*
   What temperature is best for rinsing without setting the compound or forming scale? Will this temperature provide adequate sterilization?
6. *Does the compound increase or decrease the surface tension of the rinse water? Low surface tension will expedite drainage and materially aid in drying the can. If the surface tension is increased then the drying problem becomes more difficult.*

You also must know your can washer. How is it constructed? What temperatures are used for washing, rinsing and sterilizing?

Knowing these things and perhaps others you should be able to select a cleaner that will give good results.

Can Washers are usually designed for a particular type of cleaning compound. The manufacturer of the machine will gladly tell you the type of compound which is most suitable. Machines have not been designed to operate at maximum effectiveness and efficiency with any and every type of compound that can be fed into them, although many operators believe that to be true. Many of the difficulties encountered with can washers aside from improper care are due to lack of knowledge as to how to correlate optimum and critical temperatures of the cleaner with the machine so that good performance can be obtained.

Having selected the compound to use and determined the optimum and critical temperatures you then should proceed with the washing operation by treating the wash water and keeping it properly treated throughout the washing period.

Illinois University found in studying can washing that the temperature of the wash water was perhaps one of the most important factors in getting cans with low bacteria count. They found that 160° wash water reduced the bacteria content about 75% below those washed at 140°F. Therefore, in selecting the compound for treating the water it is well to keep this higher temperature in mind.

Cleaning compounds may be divided into two classes. Alkaline and non-alkaline or acid type cleaners.

Alkaline Detergents

Alkaline detergents which are in general use for can washing contain some form of polyphosphates or complex phosphates. The more common ones are tripolyphosphate, sodium tetraphosphate, sodium hexametaphosphate and tetrasodium pyrophosphate.

They are favored especially for "threshold" treatment. They have the effect of preventing deposition of water hardness at *low* temperatures, and mix well with certain other alkalies such as soda ash, trisodium phosphate and sodium metasilicate which react favorably with milk fats to keep them from depositing. Small percentages of wetting agents are sometimes used to increase their cleaning power and free rinsing and drainage characteristics.

The optimum temperature for this type of cleaner is usually below 140°. While they are relatively stable at lower tempera-

tures some reversion does take place. The rate of reversion increases as temperature increases. Critical temperatures vary with different mixtures of alkalies and phosphates. Temperatures from 140-150° and higher tend to break down many of these products causing a film to form in the can and on the machine. If, however, a strong caustic solution pH 12 or higher is used there is somewhat less trouble from film formation, but the solution is entirely too strong for can washing. As the temperature approaches the boiling point reversion takes place very rapidly making it difficult to avoid deposition of scale.

Either an under treatment or an over treatment of water with complex phosphates will create scale. From a practical standpoint it is impossible to obtain the optimum treatment as scale formation cannot be accurately measured by water hardness alone. The type of hardness plays an important part as does the amount of milk soil contained in the wash water. Due to these variable conditions scale may ultimately form regardless of the type of phosphate used.

The use of such alkaline detergents is, therefore, limited to treatment of the wash water and then at temperatures around 140° or less. Very few if any alkalies can be used successfully at temperatures of 160° or above. They are, therefore, not suitable for use in the rinse water because of the high temperatures.

Untreated water, when heated to 160°F. and higher, deposits lime in the pipe lines, on the frame and functional parts of the washer as well as in the milk cans which are being washed. All water should be treated to prevent such deposits.

When such alkali detergents are used they are added to wash water only. No treatment is given to water used for rinsing or sterilizing because of their high temperatures.

The temperature of the wash water varies from 130-114° F. depending on the compound used. Higher temperatures although desirable in many ways, usually cannot be used without reaching or exceeding the critical temperatures which lessen the detergency power or convert the alkalies to film and scale producers.

Watch Alkalinity of Water

Alkali cleaners must be used in sufficient quantity to maintain at least .05% alkalinity or a pH of 10 to 11 in the wash tank. Therefore, in order to keep the solution at proper strength without encountering excessively high cost the washing solution is often re-used continually. Can after can is washed throughout the day with practically the same solution. Usually the only make up water added is to replace that which is lost through evaporation and by being carried over to the rinse tank.

If the wash water is continually re-used the concentration of milk fats, milk solids, foreign matter and bacteria in the wash tank increases with each can washed. Such accumulation not only destroys the dispersive action of the alkali but the washing solution tends to become highly polluted, very turbid, and far from satisfactory for cleaning purposes.

After the cans are washed with the alkali solution they are rinsed with a relatively large amount of untreated clear water at 160°-175°F. and then given a final rinse of 1 to 4 pints of untreated rinse water at 180°-200°F. This rinsing is necessary to remove the wash solution, particularly to dispose of the alkali and to raise the temperature of the can to facilitate sterilizing and drying.

The temperatures of the volume rinse and final rinse water are kept low to minimize lime and scale deposit. But even these low temperatures create a troublesome scale problem. Pumps and pipes in time fill up with scale, the functional parts of the machine cease to operate properly and the cans become coated with water stone. I know of no satisfactory method of treating the rinse waters with alkalies which will prevent scale formation and also deliver a can that does not contain excessive residual alkali. All of the rinse water, whether 160 or 200°F., is wasted to the sewer, except a small amount which is diverted to the wash tank to maintain water at proper level. This waste of heat and water materially increases the cost of can washing.

Live steam is usually used for sterilizing purposes because most untreated water is scale forming at high temperatures and, therefore, is not suitable for the important function with the Conventional method. Steam at atmospheric pressure is not a suitable sterilizer.

Drying Techniques

The cans are dried either with unheated air at room temperature or air treated to 250°F. or higher. Hot air is a good "sponge" and will dry the can more completely and more quickly than unheated air. When air is heated to 250° F. it expands in volume about 50% and its moisture carrying capacity is multiplied many times. Bacterial growth and corrosion are practically inhibited in a dry can, therefore, the method which most completely removes the moisture should be used.

The chief difficulties encountered with the conventional method using alkali detergents for washing, sterilizing, and drying cans may be briefly summarized as follows:

1. *The continued re-use of the wash water makes it rather unsatisfactory for washing purposes. Turbid, polluted water does not produce the most desirable can. With this method the wash water must be kept at relatively low temperatures to prevent film and scale formation.*
2. *The rinse water is not treated to prevent scale deposit which reduces the overall efficiency of this method. Again the temperature must be kept relatively low to avoid lime and scale.*
3. *High costs are experienced because of the large volume of hot rinse water and steam being wasted.*
4. *Finished cans contain excessive residual alkali thus promoting the growth of proteolytic and oxidizing bacteria which contribute to objectionable off flavors in milk.*
5. *Low temperatures throughout prevent high efficiency in destroying bacteria.*

Acid Cleaners

Within recent years acid type cleaners have come into general use.

Acid cleaners in general are composed of either one or more organic or inorganic acids and wetting agents. If strong acids are used a buffing or inhibiting agent may be added.

Acid cleaners have the effect of preventing deposition of water hardness through a wise temperature range. Temperatures up to 212°F. and higher can be used for washing, rinsing and sterilizing without lime or milk stone formations.

Acid cleaners decrease the surface tension of wash and rinse waters causing them to drain readily and freely from the can, and thus expedite and facilitate the drying process. Cans which are hot and contain only a thin film of moisture dry very readily.

Acid cleaners are quite different from alkalies. Just as we have alkalies which are too strong for washing tin coated cans we also find that some acid cleaners are too strong especially at higher temperatures.

The stronger acids particularly the inorganic such as hydrochloric and phosphorous acids are quite destructive to tin,

(Please turn to Page 60)

Handling Milk
CALLS FOR SANITATION PLUS

The Problems Encountered in Distributing 20,000 Half Pints of Milk Each Day Among Students at the University of Texas Have a Familiar Ring

***By* ANNA W. JANZEN**

Director of Commons, University of Texas

Consumers have their problems too. Of late there has been an increasing awareness on the part of the industry that milk handling headaches do not cease once the milk is placed on the consumer's porch. Many of the customer complaints originate as a result of poor care of delivered milk. In this article, which first appeared in in College and University Business, the difficulties that confront the large scale milk consumer are discussed. There is much food for thought here.

•

WE ARE NOT ALONE AMONG Directors of college dining halls in having a milk problem. We cannot buy directly from producers because of the large volume needed. Too, our commons is closed during vacations and on holidays, which means that we are not an everyday, year 'round customer.

Again, we require the milk to be pasteurized, bottled and sealed with protective caps. This necessitates up to date equipment and fairly extensive capital. In order to accommodate us, 400 or 500 cases and from 15,000 to 20,000 half pint bottles are required. Consequently, the supplier's path is not a rosy one.

Most state health departments require that milk sold in public places be dispensed in individual sealed bottles. No mention is made of the sanitary condition of the outside of the bottles or crates. The accompanying tables show the results of a bacteriologist's study we had made.

From these two studies we arrived at the following four conclusions:

1. Milk crates yield a high percentage of coliform positives; 50 percent of the crate samples tested showed *Escherichia coli* present; this is significant in that this organism is used as an indicator of fecal contamination.

2. Some crate samples showed exceedingly high counts per square inch of surface, but there is no standard with which to compare these figures.

3. Glasses "cupped" over milk bottles showed a great increase in the average number of bacteria per test as compared to counts on glasses not "cupped."

4. The isolation of *E. coli* from the surface of a milk bottle sample is significant. It indicates the possibility of transmission of enteric pathogenic bacteria from bottles to hands or from bottles to drinking glasses if the glasses are cupped over the milk bottles.

BACTERIA COUNT ON THE OUTSIDE OF MILK BOTTLES

Sample	Total Count	Coliform	E. coli
1	50,000	—	—
2	12,000	—	—
3	150,000	+	+
4	50,000	+	—
5	240,000	—	—
6	36,000	+	—
7	30,000	—	—
8	500	—	—
9	20,000	+	—
10	500	—	—
11	2,500	—	—
12	500	+	—
13	10,000	+	—
14	12,500	—	—
15	15,000	—	—

Key: — Negative control
+ Positive control

Not Surprised at Results

The large bacterial count shown in the study was not surprising to us. However, we are much concerned about contaminating our refrigerators. We are concerned in the handling of the milk cases and milk bottles by the employes. This is a hidden source of food contamination.

Furthermore, we are vitally concerned in the customer's handling the outside of the milk bottle, thus carrying the bacteria to the food (bread, rolls, crackers) which he picks up with his hands. The practice of cupping the clean glass over the milk bottle transfers bacteria from the shoulder of the bottle to the inside of the glass.

From a sanitary standpoint, bottle handling is a problem not solved satisfactorily. Handling of bottled milk is expensive. It requires about 1000 cubic feet of refrigeration space. It takes the full time of one porter to receive the milk, pack it in the refrigerator, get it out of the refrigerator, deliver it to the counter and carry out the empties. They are bulky and awkward to handle and result in considerable labor turnover.

Empties have to be stored from eighteen to twenty-four hours. They are a fly and roach menace. The breakage on milk bottles costs us from $75 to $100 a month. Accidents because of broken glass are not infrequent.

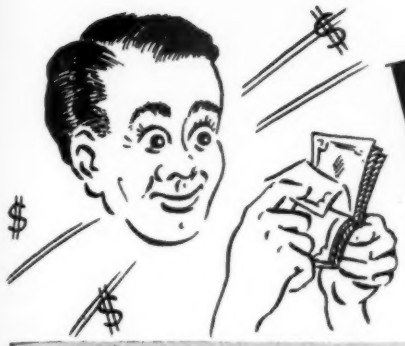
All in all, I believe that at 5½ cents a half pint or 88 cents a gallon for 16 portions, we are paying a fairly high price for milk.

The solution to our problem is the electrically refrigerated, automatically agitated, counter type of milk dispenser. The milk is delivered in "sealed in" 10 gallon cans which are set in the dispenser. Milk in 10 gallon cans is purchased more easily and at about 65 cents a gallon, a saving of 23 cents a gallon or $50 a day in our case. The milk dispenser would certainly be more sanitary, more satisfactory and more economical.

BACTERIA COUNT OF MILK CRATE SAMPLES

Sample	Total Count (sq. in.)	Coliform	E. coli
1	48,000,000	+	+
2	1,200,000	+	—
3	75,000,000	+	—
4	47,500,000	+	+
5	T.M.C.	+	+
6	48,000	—	—
7	52,000	+	+
8	140,000,000	+	+
9	395,000	—	—
10	120,000,000	+	—
Average:	48,021,000 sq. in.		

Key: T.M.C. Too many to count
+ Positive
— Negative, none found



For Your Profit...

This Damrow Stainless Steel COLD MILK FILTER with Direct Bottom Outlet

FILTERS FASTER . . . CLEANS EASIER . . .

NEW DAMROW TYPE JS, MODEL 4 STAINLESS STEEL FILTER. Capacity, 5,000 lbs. per hour. Note stainless steel legs and smooth exterior for easier outside cleaning. Can also be used as dump tank without filter attachments. Other Models: Type F, 10,000 lbs.; Type A, 15,000 to 25,000 lbs. capacity.

Here's a two-way boost to your plant production speed — plus extra protection to milk quality . . . It's the new DAMROW Stainless Steel Milk Filter with *Direct Bottom Outlet*, a combination that means high volume filtration and time-saving sanitation.

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ROUTE MEN ARE PEDESTRIANS

When Winter Comes, Proper Footwear and a Little Caution Help to Prevent the Injuries from Falls that Are an Annual Ocurrence in Most of the United States

By **ERNEST A. DENCH**

THE MAN WHO DRIVES a milk truck in wintry weather is seldom conscious of his dual role and the respective differences. One part of this dual role is that of sitting at the wheel; while the other part is that of walking to and from each delivery or servicing stop. Each form of locomotion—one with (according to terrain) a legal speed limit of from 20 to 50 miles per hour; the other, physically limited to about three miles per hour (any speed much over that transforms the pedestrian into a trotter or runner)—represents speed differences which are hard to reconcile.

If a milk truck driver is of the careful "take no chances" type, he is constantly alert to highway dangers arising from snow and ice accumulations. This carefulness seldom extends to his other role of a pedestrian. The switch from one role to the other is so different, so sudden, and so frequent (this frequency depends on the number of delivery stops during the day) that his mental flexibility is not equal to the adjustments. He is first, and last, a truck driver—a man with a strictly mechanized viewpoint. He is aware that he has to drive carefully on slippery surfaces, especially on curves, and up and down hills. He approaches a delivery or pick-up stop. His reasoning now is: "How far can I drive without getting stuck in the snow or skid on the ice?" He does one of two things—either he drives slowly or gets out to check up on conditions.

He Has to Walk Sometime

Whatever action he takes, he will have to step out from the truck, whether for a short or long distance. The inches, feet or yards he travels on foot do not materially matter—the FIRST few steps as a pedestrian do. The protection of a heated and covered cab, plus his experience of driving surfaces in foul weather, lull him into a false sense of security. Rarely does he consider that a misstep on foot may be his temporary or permanent Waterloo. If young—and the feminine charmer type—he may be vain or cocky enough to wear stylish city oxfords, and perhaps city rubbers—the smooth, thin model—over them.

Let's picture him, with such inadequate winter foot protection. He steps from the truck at two to three miles per hour with the utmost confidence. Actual pace does not matter; the degree of traction does, particularly during the first few steps. If he is poorly shod, he is liable to lose his balance. A sudden fall as a pedestrian may do him as much body injury as in his other role of being unable to control a truck skid at a much higher speed. Furthermore, this pedestrian casualty may occur on a level straight but slippery private driveway, path or parking lot.

Use Available Aids

If the truck driver is a babe in pedestrian knowledge, or 100% automotive-minded, it will surely crop out when he walks, or attempts to walk, on any uncleared slope or curve. The experienced hills climber (and the writer of this article is one of them) or seasoned mountaineer ascends or descends a slope sideways step by step, it acts as a natural brake. He also grasps, for added protection, every possible hand or foot hold—a small but strong tree branch, a projecting, but sharp-pointed, small stone or large boulder; or a piece of earth, loose and soft, or with a dense low growth.

In civilized, or developed, areas there are hand and foot hold equivalents in a shrubbery hedge, wooden or metal fence or railing, and rough uneven treads on paths between each slab of flagstone or concrete.

Equally important to safety is the hill climber's "eyes downward" technique. He carefully appraises the next step before taking it. He looks, too, for potential hand holds. The truck driver, carrying a heavy or bulky load, may have only one hand free for this purpose. The weight or bulk of what he is carrying can easily disturb his balance unless he exercises the proper care.

Wearing of city oxfords, even with the over-protection of heavy firemen's rubbers, do not prevent damp or wet feet when, in places, the snow or slush is deeper than the shoe tops. It takes but a single step to do it—and if it occurs in the morning or early afternoon, the truck driver may be absent from duty the next day because of a cold. His services will be lost until he is cured.

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High tops are, as we are all aware, unfashionable, ugly, and clumsy. No young man as truck driver wants to be shod like a "hick." But his winter choice is, in the final analysis, a toss up between style and utility.

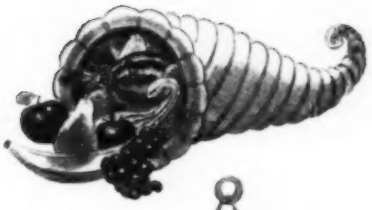
Favors Hunting Boot

The favored choice of experienced outdoors men (many of them city dwellers) for two decades is the Maine hunting shoe or leather top rubber. It is catalogued by either name, according to maker. Neither description is strictly accurate, for any footwear model above the oxford height is regarded by the wearer as a boot. The footwear model in question is neither an oxford or a slip-on rubber overshoe. In actuality, it is a true boot, eight to twelve inches high, which laces up over a complete and solid built-in tongue which allows no seepage whatsoever. Sole is of heavy rubber with a deeply-indented corrugated surface to provide adequate traction on slippery surfaces. From the sole up, leather is used. It can be made snug and warm in winter by the wearing of a heavy felt or lamb's wool inner sole. The model has not the clammy feel of an all-rubber boot.

Falling, a Widespread Problem

Apart from excluding wetness and dampness, this type of boot lessens falls on slippery surfaces. Kentucky may appear to be far enough south to escape the ravages of winter; yet the State Board of Health nonchalantly records the fact that one-third of its residents lose their respective balances while walking on snow or ice surfaces. Some of the more serious cases are serviced by funeral directors; other cases land in hospitals, for appropriate treatment of broken bones, sprains, etc. Kentucky pedestrian casualties on slippery surfaces are double the number "mowed-down" by mechanized vehicles on highways during the four seasons!

If this writer seems to unduly dramatize this condition, it is because Kentucky's normal annual snowfall is relatively light—13.6 inches. There are thirty-four other states in the Union with higher snowfalls. Of this number, twenty-six states have snowfalls exceeding twenty inches in a season.



Match up the people and the horns

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MILK AND DAIRY PRODUCTS *in the* AMERICAN WAY OF LIFE

By **WALTER B. GARVER**

Agricultural Economist, Federal Reserve Bank of Chicago

It was held, at one time, by certain French adventurers that, a Frenchman, given a reasonable amount of prosperity and enough "glory" to satisfy his egotism, would not care very much about the kind of government he had. In this searching address, delivered before the National Dairy Council at Milwaukee an able citizen of the Republic, points out that the price of planned stability may quite possibly be stagnation.

●

IT IS PERHAPS UNFORTUNATE that economists are expected, by some strange magic, tobe able to forecast the future with clairvoyant perfection. Economists are no more vested with such powers than are any other of the vocational groups. But economists are trained tostudy, anàlise, and interpret economic and social factors and forces. Because they are thus specialists at this job you have a right to expect of us insights and perspective that should be the fruits of devotion to such considerations.

Anyone who tries his hand at studying economic forces must realize the ever-increasing complexity of the factors at work in modern economy and the unpredictable way these factors have of working out. This vast and intricate complexity of our business and social affairs should bring humility to the most daring mind. One of our greatest dangers today is the temptation to oversimplify, to reduce everything down to some simple cause and cure, to try to cook up a "plan" that will give us the panacea of stability, prosperity and security forever more. I can think of no more forlorn hope, however bright it may appear, no more destructive mistake than to try to pour American society, our whole economy, into a fixed mold, howsoever beautiful, and expect thereafter that we shall retain our capacity to grow and progress.

I want to come back to these dangers in a few moments, but now let us look at the economic situation, and particularly at some important developments in the dairy industry. The experience of the last several years has taught us very pointedly the relation between general economic conditions and the level of food consumption and farm prosperity. Not so many months ago many economists were predicting a recession or depression for 1947 which did not materialize. If we are to look ahead it is well to ask ourselves where do we stand today in our economic activity, and what are the prospects over the year ahead.

Where Do We Stand

For most of us today the great question is "How long and how fast will the inflation continue?" This is true whether we are consumers or producers. Let us look first at some of the factors that are inflationary. (1) Some sort of a Marshall Plan appears likely which will make demands on our goods and services for relief abroad. (2) There is still a huge backlog of unsatisfied demand in our own country for such things as housing, automobiles, refrigerators, etc. (3) There are still bottlenecks and shortages in our industrial production which push satisfying these demands into the future. (4) Plants and corporations have long-deferred replacements and expansion yet to be made. (5) There is a prospect of personal income tax reductions giving those who do most of the spending more cash to spend. (6) Corporate dividends have been and are increasing, giving another group more to spend. (7) The third-round wage increase is close at hand, raising the dollar spending power of laborers. (8) People are saving less and spending a larger share of rising incomes. (9) Population increases since 1940 mean enlarged demand. The four million new families formed since then have needs to be met. These are some of the inflationary factors.

Deflationary Factors

Over against these can be set some perhaps equally impressive deflationary factors. (1) The rising costs of living are pricing more and more people out of the market, especially those on fixed incomes, or incomes rising too slowly to keep up with the rising prices. (2) High prices are exposing more and more business firms for many of whom even a leveling off of prices may mean trouble even without an actual drop in prices. (3) Some of our backlogs of demand have been met and price weakness and relative surpluses are threatening in some lines. (4) We recently have seen a decline in our exports, and it is not likely that under a Marshall Plan, even more "generous" than some probleble now, the drain on our goods and services will equal the 1947 rate when foreign countries were exhausting their dollar exchange. (5) Working capital is getting tight for some firms and it appears that their present rates of expenditure cannot be maintained without use of more bank credit. Bankers are becoming justifiably cautious in the face of growing signs of danger. (6) Some businessmen and industrialists are also growing cautious and have changed their plans for expansion, shelving them in many cases for a more favorable cost situation. (7) Inventory accumulation has been going on at a pretty fair clip and this accumulation may come to an end shortly. (8) Developments of the past two months have brought a somewhat firmer set of interest rates and it may be that the complicated financial and fiscal network wih which interest rates are entangled may see some developments shortly that will be deflationary. (9) Time and rising prices have set the stage for a public psychology of deflation. This is true especially for some farm products and foods. Citrus fruits have already felt the shakedown of readjustment. Barring unforseen developments grain prices are now at or near levels where the only direction they can go is down. Once the evidence of price softening begins to accumulate a deflation psychology could spread like a prairie fire, reducing employment and economic activity.

These, then, are some of the deflationary factors. Now to weigh each of them proprely and to judge the timing of their effects are of course the ques-

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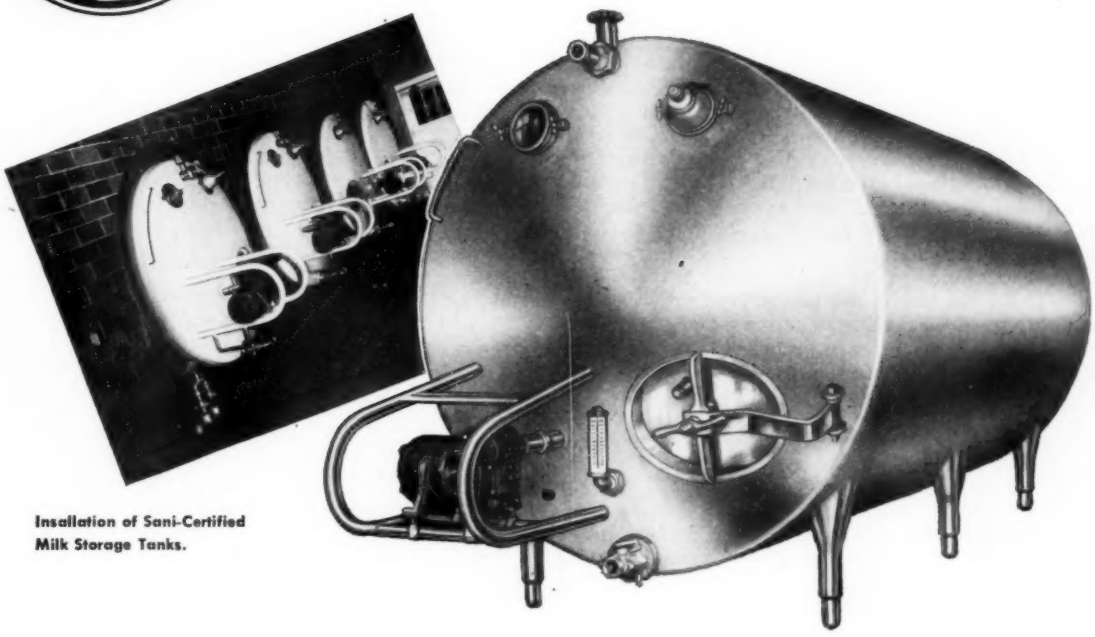

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tions that defy precise answers. In my own personal judgment they add up to a conclusion that we shall not get through 1948 without some serious scares, and possibly something of a turning point much more serious than just a scare. Inflation is something that cannot go on forever without bursting out its seams. The stresses and strains in our economy are increasing and rapidly shortening the time when the inevitable reaction will come.

I think it is, therefore, risky to expect unbroken continuation of the high levels of demand and of prices for foods. Already butter prices are a matter of some concern and uncertainty. It is true that because of the food situation a somewhat smaller milk production is expected this year. But when we consider the production position of the dairy farmer it must be remembered that even in the face of possibly lowered prices over the next 12 to 15 months he will still find it to his advantage to do his best at optimum, efficient production of milk to meet his vast and growing market.

Facts About Industry

Lets look now at some of the important facts about the milk and dairy products industry. Before the war years we as consumers spent from one-fourth to one-fifth of our incomes for foods and beverages. In 1929, the last "boom" period the proportion was 21 per cent. In 1933 it was 23 per cent and for 1940 it had risen a little to 25 per cent. But during 1946 and 1947 we were spending 30 per cent of our incomes for foods and beverages. Perhaps these figures do not tell the full story because as times change we have been disposed to save varying proportions of our incomes, from four to five per cent in some years, and as high as 22 per cent in 1944. Since then the rate of savings has again declined materially. So let us express the expenditures for food and beverages in terms of total consumer expenditures. For 1929 and 1933 the proportion was 22 per cent. For 1946 it had risen to 26 per cent, and for 1946 and 1947 the rate was one third, that is,—33 cents of every dollar we spent was for food and beverages.

This abnormally high production was largely the result of wartime developments. The curtailment of production of consumers goods, travel and gasoline restrictions, and the various other sacrifices of the war cut off from the consumer many of his normal outlets for expenditure. This left funds in the hands of consumers to be spent on foods, and even though many things were rationed our total physical consumption of foods rose. Many people found themselves temporarily at least, able to "eat better". Moreover, the war mobilization resulted in some changes in the pattern of income distribution, with some formerly lowest income groups getting a relatively greater increase in incomes than for those whose incomes were normally higher. From among this so-called lower income group there were many people who became for the first time in history customers for quality, luxury and high valued foods.

Competition for Consumer's Dollar

As peacetime production returns to levels more nearly in line with demand it is to be expected that consumer durable goods will compete again and increasingly for the consumers food dollar. As we have homes, cars, radios, refrigerators, stoves, etc., to pay for or make payments upon out of income it is to be expected that the food budget will again be watched closely, and funds shifted to meet the new needs. Of course some of the changes toward spending a higher proportion of income on foods may be sufficiently permanent to hold the proportion higher than prewar levels. It does seem to me that people have a higher appreciation of food than they ever did before. To the extent that such gains have been made, especially where they are along sound nutritional lines it is of benefit to the health and morale of the nation and an achievement of lasting credit to the toiling host of people, of which this group is a highly important part, who have labored by educational and promotional techniques to raise the nutritional standards of the nation's consumers. But whatever the magnitude of these permanent gains in food appreciation, I think it should be clear that some retreat will be inevitable. I don't believe that we as consumers will continue to spend one-third of all our outlays for foods and beverages.

Advances in Nutrition

The American diet has undergone a major transformation during the past thirty years. Part of this change has been brought about by the changing of our work habits. It was not before the living memory of most of us that to labor meant really exhausting, sweating toil. The muscular exercise of manual labor meant heavy demands for the energy foods—potatoes, cereals, and meats—to supply the proteins that give endurance. Men still toil and sweat and are exhausted, but not so hard for the most part, and there are not so many of them. Our per capita consumption of potatoes and grain products has gradually declined and is now more than one-third below the amount we ate 35 years ago. Even the per capita consumption of meat, poultry, and fish has declined by about ten per cent, and it is only in the last ten years that the trend was reversed. Since then the decline has been, at least temporarily, wiped out.

But work habits are only a part of the story. A major factor in our changing dietary habits has been the rapid strides made in the nutritional and health sciences. Per capita use of fats and oils has increased 20 per cent in the last twenty years, and probably would have shown even greater rises if wartime shortages had not intervened. Our per capita consumption of fruits and vegetables has increased 40 to 45 per cent in the last third of a century, and our consumption of milk and dairy products is up more than one-third for the period. More than half of this gain had been made before the war began. While the rise has not been quite as satisfactory as that for fruits and vegetables, there are nevertheless goods reasons to believe that the future holds promise of seeing further substantial increase in consumption.

Education Is Vital

Nutritional science cannot, of course, bring progress to our health and diet unless the findings of science are implemented and made effectively into food consumption habits. This means that the vital key to progress is in the hands of just such people as you, who, by educational and promotional programs translate knowledge into beneficial practice. In view of the usual human inertia and resistance to change, the work you have already done stands as an outstanding evidence of the fruits of the devotion, persistence, and skillful organization that have enabled you to get the job well started. The work of the National Dairy Council, and of its affiliates, is therefore of the utmost importance in furthering for dairy products a wider and deeper appreciation in the minds of food consumers.

On the production side there is also promise for the future. While the dairy farmer may from time to time find himself in difficulties because of the relationships that develop between prices and costs, his brothers in other farming enterprises experience just as much, and sometimes more trouble. Dairying is not for the fly-by-nighter. Its relatively large capital investment requirements, its slow biological cycle and the skill and devotion required of its practitioners make of it a high calling. It demands the kind of devotion to work and stability of judgment and temperment that are the essence of sound citizenship.

The dairy industry, from the farm to the consumer, today is on the threshold of transition from war to the painful readjustment period. During the war years the industry found itself, especially rising costs, especially for labor, returns at the farm, in a milk squeeze that made dairying relatively less attractive than some other seemingly more favored farm enterprises. Between price ceilings and

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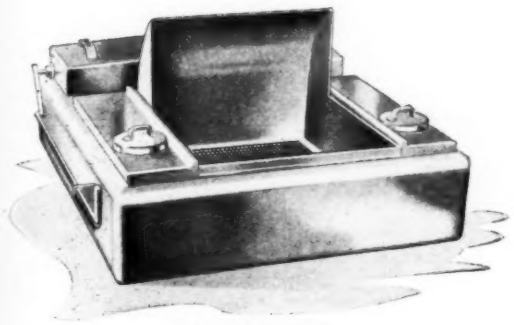

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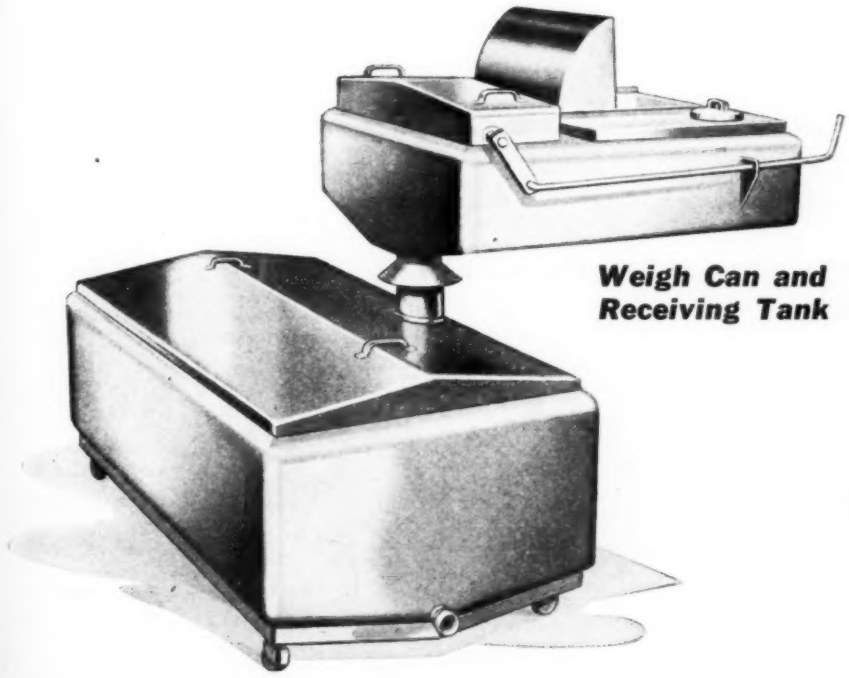

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were less spectacular than they might have been under different conditions.

But the compensating part of this picture is the relative stability of the dairy farm over the long pull. Prices of farm products go up and down, and with them farm incomes. But the relative advantages of dairying from the standpoint of stability may be shown by a few figures. From 1929 to 1930 gross cash farm income dropped by 20 per cent, while income from dairying dropped only 12 per cent. By 1933 the decline in gross cash income from 1929 had become 54 per cent, but for dairy income only 44 per cent. Again, in the 1937-38 recession, gross cash income declined 14 per cent, while dairy income was down only 9 per cent. Of course, periods when prices and incomes have risen were characterized by correspondingly smaller rates of rise in dairy income. In spite of the relative stability of dairy income there have obviously been periods when dairy farmers, along with other agricultural producers, have been bitterly discontented with the instability of farm returns. This is especially painful to farmers, who are about the most stable and consistent producers in the entire economy. This discontent with instability by farmers and by many other groups has led to a politics-economic movement advocating economic stabilization. Many groups are yearning after stability and security. These ends do at times look very attractive, especially in the bright new world that is sketched hazily on the drawing boards of many of our "planners". Of course, it is always assumed that such security and stability is to be achieved at a high level of employment, incomes, and production.

The Price of Stability

The thing that dismays me in all this is the shocking failure to realize that all these ends, if achieved, are not even partial victories,—to reach such goals would mean a complete surrender to stagnation, regimentation and abject slavery to a sprawling and complicated monster of a state, regulating ever more and more of not only our work and productive effort, but our consumption as well. Once we are irretrievably committed to a scheme of sacrificing everything to "stability" the die is cast, and more and more must our lives be regulated, circumscribed and manipulated in order to meet one after another of the new "problems" that arise as consequences of our misguided efforts to achieve stability.

No complex economy can function at all without the pricing process, and to try to force prices by unnatural devices is to interfere destructively with the ability of the economy to change and adapt to changing situations. If you will pardon a crude simile, I look upon the price function as similar to the gas pedal on my car. Demand is like the pressure on the pedal, speeding up the motor when pressure is applied, just as demand stimulates the economy. The increased flow of gas into the carburetor and motor are like supply in the economy, increasing in response to demand. My car would be a useless and dubious ornament only if I decided in the interests of "stability", of constant gas consumption and stable speed to lock the gas feed in some fixed position, even if changed periodically to approach the requirements of long-time changes.

Rather than freezing our economy according to some pattern or at some level howsover desirable, it should be the function of government to lubricate the economy. Government should remove the barriers to more rapid adjustment, should help to remove some of the rigidities that impede progress. Rather than throw more blocks in the way of the driving forces of demand Government should assist us, as we use our brains, resources and labor to meet these requirements.

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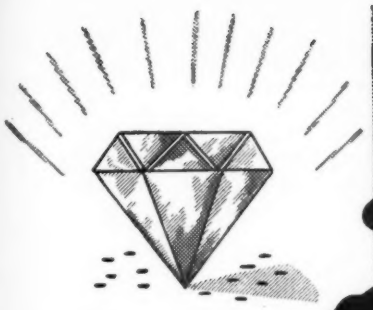

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Square Bottles in California

Sixty-six Dairies Are Now Using Squares on the West Coast — First Introduced by Arden Farms

BY ADOPTING THE SQUARE SHAPED bottle, recently, the Carnation Company of California became the sixty-sixth dairy in the Golden State to use the new type containers. The use of the square bottle has spread rapidly on the West Coast since its introduction in that area by Arden Farms of San Diego in August 1945.

The bottles have apparently found favor with the housewives. According to routemen, once the square bottles are used it's "marriage for keeps".

Elsewhere in its California retail operation, in Los Angeles and Oakland, Carnation has substituted square containers for old tall-style round bottles for the dual purpose of providing better service in a highly competitive market and also increasing plant efficiency, since the square bottle takes one-third less storage and truck space than its predecessor.

The heaviest concentration of square-bottle users is in the Los Angeles area where 43 dairies have this type of container. The list of Southland dairies which have converted to the square glass container includes, in addition to Arden and Carnation, Adohr Milk Farms, Royal Farms Dairy and many members of the California Dairy Products Company and Comalac Service Company.

Twenty-three concerns use the square glass package in the Bay area, including Carnation, American Dairy, R. A. Shuey Creamery, Lucas Valley Dairy and Toyon Creamery. Thirty-four firms in Washington and Idaho distribute in the square bottle, and all home-delivered milk in Tacoma is packaged "on the square." Thirty-three more dairies are on the square-bottle list in the Salt Lake area headed by the big Cloverleaf Dairy, division of Pet Milk, at Salt Lake City, and there is one operation each in Oregon and Nevada.

Today, Arden's big plant at Beverly Hills, Calif., which washes, fills and double-caps an average of two hundred square bottles a minute on twin, converging processing lines, is one of the West's more efficient large dairy operations.

Conversion of packaging lines from round to square bottles has been worked out by engineers in the industry and is accomplished with a minimum of changes. For example, cases, about a third smaller than those used for round bottles, are exactly as long as the old-style cases are wide, requiring no change in case conveyor systems.

The square bottle weighs 17¾ ounces, compared with 22 ounces for old-type bottles, providing an advantage in weight as well as compactness. It also is almost an inch shorter. Dairy storage rooms and delivery trucks will hold a third more milk in square bottles. The square bottles also take smaller caps, a very important economy especially now when many dairies are double-capping, due to competition or legal requirements. The square bottle's especially designed, recessed, dripless pouring lip is 48 millimeters in outside diameter compared with 56 millimeters for the old-type container.

For housewives, the square bottle's advantages are numerous and obvious. Most refrigerator compartments hold just twice as many squares as rounds, doubling home storage capacity. They pour neatly, without milk dribbling down the bottle's side. They are easier to grip and will not roll off tables or sinks.

Polls taken by manufacturers and consumer service organizations have shown an overwhelming preference for the bottle by consumers. The improved bottle also is highly popular in the dairy industry and many more California creameries plan to change over to it as soon as they can get delivery on necessary plant equipment.

It's a Dorsey for REFRIGERATED TRANSPORTATION

Model "IC", with fibreglass insulation in the floor, walls and the roof, is ideal for transportation of dairy products. Completely sealed, the body can be easily washed and flushed without leaking through insulation.

MODERN DESIGNED TRANSPORTATION

The Dorsey Ice Cream and refrigerated truck bodies have proven in daily service and under every condition their Dependability and Economy.

Skillful designing and flawless workmanship have again produced outstanding Dorsey styled refrigerated bodies.

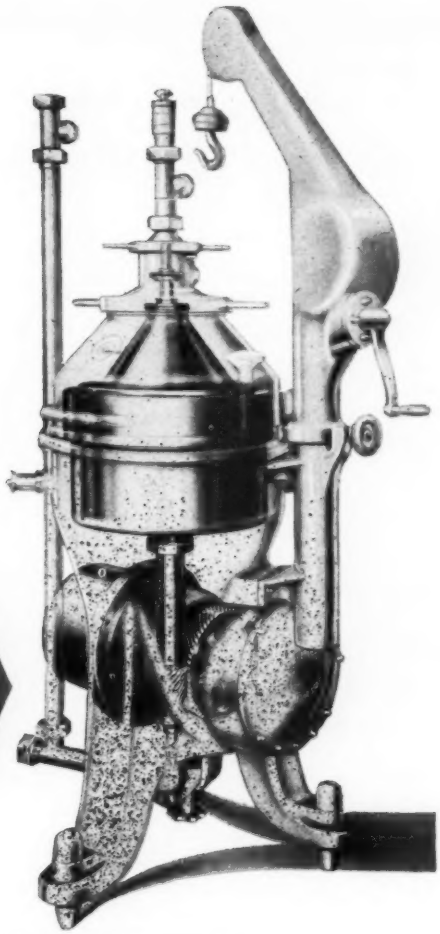
Choose the Dorsey for trouble and worry free transportation of Ice Cream, Dairy Products or Frozen and Perishable Foods.

See your Dorsey Dealer.

DORSEY

DORSEY TRAILERS
INCORPORATED
ELBA, ALABAMA

Watch the ADS for ECONOMY TRENDS in DAIRY EQUIPMENT



Featured in current advertising of major dairy equipment units are two *completely* corrosion resistant fillers, one *completely* corrosion resistant continuous freezer, one *completely* corrosion resistant short-time pasteurizer and, of course, *completely* corrosion resistant Sharples Presur-Seald Cream Separators and Milk Clarifiers. Dozens of smaller items feature substantially the same type of construction, together with numerous major pieces—storage tanks, for example—which are almost completely non-corrosive.

Dairy equipment which indefinitely resists rusts and corrosion was a few years ago regarded solely as a costly venture into the realm of ultra-sanitation. Today its use is regarded by leading dairy companies as part of a long range program of cost reduction.

Sharples—the pioneer producer of *completely* corrosion resistant cream separators and milk clarifiers—is happy to have its judgment of the value of this type of construction confirmed by so many other dairy equipment manufacturers . . . and users.

The SHARPLES CORPORATION

Presur-Seald SEPARATORS and CLARIFIERS

Dairy Equipment Division

EXECUTIVE OFFICES AND FACTORY, 2300 WESTMORELAND ST., PHILADELPHIA 40, PA.

New York 17, N.Y. 501 Fifth Avenue
Chicago 4, Ill. 80 Jackson Boulevard
Boston 10, Mass. 230 Congress Street
San Francisco 5, Cal. 686 Howard Street
Cleveland 15, Ohio 453 Hippodrome Annex Bldg.

ATLANTIC CITY IN OCTOBER

Dairy Industries Exposition Will Be Held in the World's Largest Convention Hall — Record Number of Exhibitors Expected to Participate

A MAMMOTH INDUSTRIAL SHOW—the sixteenth Dairy Industries Exposition—will be staged in the largest convention hall in the world at Atlantic City, N. J., during the week of October 25 to 30 inclusive, according to a statement issued by the Dairy Industries Supply Association.

A greater number of exhibitors than ever before and a showing of the very latest in dairy equipment, supplies and technological improvements, will highlight the Exposition, the Association affirmed.

"Buyers should be able to go to this Show with a knowledge that normal deliveries will then be possible with virtually every item on display," a DISA spokesman said. "Several thousand separate items, of some 500 different classifications, all essential to the industrial handling, processing, manufacture and distribution of milk and its products, will comprise the exhibits. These will run the gamut from vanilla beans and carton liners to huge bottle washers and milk tank trucks. Many of the mechanical items will be demonstrated in operation."

"There is every indication," he added, "that attendance will outstrip the record of approximately 23,000 set at the last Show in 1946."

Concurrent Conventions

Timing of the Dairy Industries Exposition is simultaneous with the dates of conventions and annual business or study sessions of several other dairy groups. Meeting in or near Atlantic City at about the same time will be:

(1) International Association of Ice Cream Manufacturers—Atlantic City—October 25, 26 and 27.

(2) Milk Industry Foundation—Atlantic City—October 28, 29 and 30.

(3) Dairy Industries Society, International—Atlantic City—date not yet determined.

(4) A number of other associations in the dairy field have tentatively arranged to hold their conventions in nearby cities on immediately preceding dates so that their members may readily inspect the Show after their meetings.

The huge Convention Hall, directly on the Boardwalk overlooking the ocean, all of the five-acre area of which will be required to house the exhibits, will be a point of contact for buyers and sellers, and a "practical industrial university" for thousands of dairy processors, suppliers and equippers.

The huge display hall at Atlantic City will house a greater number of exhibits than any previous show. Normal deliveries should be possible on nearly all items on the floor.

International Visitors

The presence of hundreds of industry representatives from overseas, many of them members of DISI—the Dairy Industries Society, International—will spotlight the Show's international aspect. DISI, formed at a world-wide breakfast in Atlantic City during the last Dairy Industries Exposition in 1946, will this year come into a kindred scene as a going organization with a membership in 38 counties from every section of the world. The Society serves as an international clearing house for progressive information in the dairy field.

"With serious food problems facing populations outside the United States, it is certain that visitors from abroad will make every effort to come to Atlantic City to increase their industrial know-how and to boost production in a vital food

FOR A DEPENDABLE SOURCE OF HIGH QUALITY DAIRY PRODUCTS, CALL US.

MILK
FRESH CREAM
FROZEN CREAM
SOUR CREAM
COTTAGE CHEESE
FARMERS CHEESE
POT CHEESE
BUTTER
BUTTERMILK
DRIED SKIM MILK SOLIDS
SWEENTENED SKIM CONDENSED MILK
ICE CREAM MIX
BAKERS CHEESE
PLAIN SKIM CONDENSED MILK

GRANDVIEW DAIRY, Inc.

6071 METROPOLITAN AVENUE, RIDGEWOOD, N. Y.

PLANTS AT:

Arkport, New York — Bear Lake, Pennsylvania — Cohocton, New York — Neenah, Wisconsin

industry. The dairy industry already forms the backbone of many national economies and its further rapid development is eagerly desired in practically every country. In those countries in which milk production or the processing of dairy foods is not practicable, there is an insistant desire to obtain importable dairy products," dairy officials said.

Hotel Reservations

During the first week of April all participating associations will issue, simultaneously, official reservation forms for hotel accommodations. *Until that time, no hotel accommodations for the Show week may be reserved.* A future announcement with full hotel details and reservation procedures will be made in plenty of time for everyone to book accommodations.

DISA spokesmen assert positively that there will be rooms for everybody, Atlantic City having been selected as the Show site because as well as for unmatched hotel facilities as for its unexcelled exhibit hall capacity.

Ehibitors and Registrants

Only DISA member firms will be privileged to present industrial displays. Again this year, however, the Exposition will include many stimulative educational exhibits.

In dairy circles, the Dairy Industries Exposition is referred to simply and uniquely as "The Show"—because of its size, technological significance and volume of individually identified visitors. It is recognized as the largest exposition in the world for a clear cut field of industry—an industry which, in the United States, now passes the seven billion dollar mark every year in the retail value of its products and buttresses the health of nearly 150,000,000 individuals.

It is estimated that milk, basic products of the dairy industry, is produced in sufficient quantity each year in America to fill a river three feet deep and 40 feet wide, stretching across the continent from New York to Los Angeles. Some ten million people are dependent to some degree on the industry for a livelihood.

Every phase of this basic enterprise, the dairy industry, will be represented at the Dairy Industries Exposition. NOT open to the general public, the Show nevertheless, will welcome through its doors qualified educators, scientists, publicists and public officials. It will bring together the greatest concentration of dairy industrial entrepeneurs at one place at one time in the world.

●

West Coast Name Change

EFFECTIVE JANUARY 1 the Dairy Equipment Division of the Sacramento Bottle Exchange adopted the name Coastal Creamery Equipment Company. The company, which handles dairy and creamery equipment and refrigeration supplies(recently expanded its facilities.

In a letter to the dairy industry the firm said:

"The Dairy Equipment Division of the Sacramento Bottle Exchange has been growing steadily since its inception, but for a long time has experienced difficulty in functioning under a name which is not clearly indicative of the real nature of its business.

In order to eliminate confusion, it has been decided to adopt an entirely new name:

COAST CREAMERY EQUIPMENT COMPANY—

effective January 1, 1948. No change in ownership or management is involved, simply a change of name. The Sacramento Bottle Exchange operations will continue as before, but as a division of Coast Creamery Equipment Company.

For the past year, we have been located in our new headquarters at 701 12th Street, Sacramento, where we have our offices, display rooms, warehouse facilities and service shop."

Try

KLENZADE'S PROVED ALTERNATE CLEANING METHOD

The alternate method is simple—good alkaline products will remove fats, greases and heavy soils, but may not always control lime-stone and stains; organic acid products are excellent at removing and preventing lime desposits, stains, milkstone and hard water precipitates.

Through exhaustive experimentation we have found that a washing schedule which alternates three days organic acid and two days alkaline maintains the perfect balance for most efficient cleaning of milk cans.

We recommend Acid Klenz, one ounce to each five gallons of water for the original acid charge; CBS Cleaner, one ounce to each five gallons for the alkaline charge. In both cases, add one ounce for each 75 cans washed. Follow recommended procedure for truly sparkling milk cans.

Chemical specialties for dairy, food and industrial sanitation — Water treatments — Chemical feeding and proportioning equipment—Engineering, technical and laboratory services.

KLENZADE

KLENZADE PRODUCTS

INCORPORATED

BELOIT, WISCONSIN

CHEMICAL CLEANING SPECIALISTS SERVING THE DAIRY INDUSTRY WITH CONVENIENTLY LOCATED BRANCH OFFICES, WAREHOUSES AND DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE NATION

FORD SHOWS NEW MODEL TRUCKS

Driver Comfort, Increased Efficiency, Featured in 1948 Designs — "Largest Truck Built by Ford" Presented to Public for First Time

"THE LARGEST TRUCKS ever built by Ford" are featured in new streamlined 1948 model trucks shown for the first time in January. Representing the first Ford post war product the trucks are "completely new from the ground up."

Two new heavy weights are the F-7 and F-8 series with maximum gross vehicle weights of 19,000 and 21,500 pounds respectively. A third series is a six-cylinder cab over engine model. The lighter model is powered by a 95 horsepower six-cylinder engine while the heavier trucks use a 100 horsepower V-8 for the F-7 series and a 145 horsepower V-8 on the F-8 series.

Many New Features

The new engines, known as the Rouge 226, the Rouge 239 and the Rouge 337 include heavy-duty oil bath air cleaners, pressure sealed cooling systems, and new weather-proofed ignition systems with automatic spark control. New distributor and wiring arrangements grouped for easy servicing, shot blasted, rust proofed valve springs, precision type oversized crank shaft and connecting rod bearing inserts are other features of the new models. High capacity generators built to deliver maximum output at low engine speeds plus high volume replaceable-element oil filters are also listed among the new features.

Each of the models has a variety of individual characteristics which according to the manufacturer, add to its efficiency. Aluminum alloy pistons which are plated to resist wear improve the six-cylinder model. These pistons have four rings above the wrist pin for maximum oil economy and minimum friction loss while it is said that the compression ratio, 6.8 to 1, produces more power. A high-lift camshaft provides more efficient intake and exhaust by improved action in opening the valves.

A heavy duty, all enclosed body, gives an impression of power on this new Ford truck.

The 145 horsepower job, the grand daddy for size in the new models, boasts of hydraulic valve lifters which automatically compensate for valve wear and tear and also insure quiet operation. Extremely tough metal on the exhaust valves, a carborator with a built-in governor that operates from engine speeds are other features of engine design. In spite of the size of the 145 horsepower unit, the manufacturer declares that easy handling is a fact achieved by increased steering ratios.

The pick-up unit shown here is powered with one of the lighter engines.

Five Speed Transmission

Clutches on the larger trucks are 12 inches in diameter, purposely large in order to handle the peak torque of 255 pound feet developed by the 145 horsepower engine. The large truck also has a five-speed transmission. A two-speed axle in conjunction with the transmission design makes 10 speeds available for all types of loads and roads.

Frame and chassis design has been in keeping with the general rugged nature of the engine. Increased rigidity in the frame has been gained by extending the side rails so that they join the heavy channel steel of the front bumpers. On the two eight-cylinder units these frames are nine inches deep with alligator jaw cross members. The heavier models are controlled with vacuum power brakes and the wide wheel base rims have tapered tire bead seats.

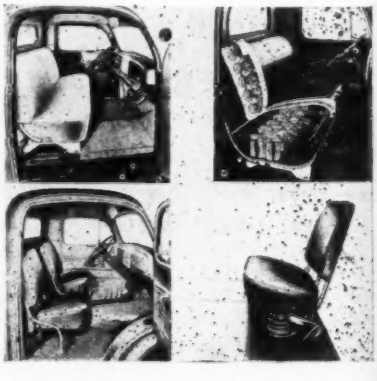
The light trucks are provided with direct action shock absorbers and shorter turning is facilitated by wider axles.

Cabs for the new trucks have been redesigned, the manufacturer says, with an eye to living room comfort. The door opening has been moved forward three inches giving a greater freedom of entrance and exit while an additional seven inches in the width of the cab provides more space in the cab both in terms of seat space and head room. The doors extend below the floor and are weather sealed against moisture dust and drafts. Fresh air ventilation is achieved through a three-way air control system. A larger windshield, the height has been increased by two inches plus an enlarged rear window, are features which the Ford Company points out, add up to better visibility.

Adjustable type coach seats with individually wrapped coil springs and rubberized hair pad are a far cry from the Spartan ecoutrements of trucks a decade past. Ash trays, dispatch box, sun vizor and even a grille opening for a radio installation complete the truckman's paradise.

The trucks are designed for a wide variety of uses. Industrial and agricultural types predominate in the heavier models while the lighter designs will have considerable appeal as delivery and pick-up units.

New arrangements providing for easy access to engine and engine attachments have been provided in an effort to reduce maintenance costs to a minimum. Economical operation of the trucks coupled with the rugged body lines make the vehicles valuable contributions to the nations industry.



Driver comfort is an outstanding feature. Details of seating facilities are shown here.

COLUMBUS MEANS BUSINESS

(Continued from Page 32)

handle even if it means taking them away from some other dealer. But you don't get new customers in Columbus by bringing on a ruinous price war, you get them by putting out a better product, more efficiently and with better service, than the other fellow. There is about the Columbus Milk Distributor's Association an understanding of the factors, economic and human, that make a market tick, which is hard to duplicate any other place in the country. There is a cohesiveness, not in restraint of trade but in encouragement of trade, that deserves careful study.

What Makes it Go

Why does this Association work? What does it have that enables twenty-five operators, in an extremely competitive business, to work together in a fine co-operative team and at the same time allows competition to function at its best. There are a number of reasons. The Association is well financed. Each member contributes two cents per hundred weight on all milk that is received at his plant. As a result of being well financed the Association can employ a secretary and engage the necessary talent to consummate the projects that it undertakes. Secondly, the Rules and Regulations are specific and deal with questions that are financially important to the members. The question of universal bottle ownership and use is covered in the rules. Furthermore, the rules are very definite on the subject of meetings and attendance at the meetings. The heart of the Association's success, however, is action. It does things. Not just one energetic member works but every member works. No less than twelve committees are actively engaged in association work. Out of this work, this participation, comes a fierce loyalty to the Association and a realization what concentrated effort can accomplish. It would be untrue to say that financial considerations in the form of better business conditions are not one of the primary motives. It would also be untrue to say it is the only one. If you were to ask a Columbus distributor why he belongs to the Association he would probably say "Because its good for my business." Then he would probably add, a little vaguely perhaps, because it is a difficult thing to put into words", I guess I belong because it's one fine outfit, mister, and I helped to make it".

Contest Federal Order

The Association is currently engaged in a trial at law with Uncle Sam. The dispute revolves around the Federal Milk marketing order for Columbus. The Columbus handlers feel that the order is unnecessary and tends to stifle the competition they have striven to develop. The producers, they point out, have a strong organization and are not likely to be the victims of any squeeze. In addition competition from other cities, not under regulation, tends to cost dealers their producers. The Association has filed form 15A and is contesting the order.

In its tilt with the Federal Government the Columbus Milk Distributor's Association is entirely in character. There are many sides to the question of market regulation as anyone in the dairy business knows. The argument generally boils down to the contention that under government orders the market has a stability and orderliness that it could not enjoy otherwise. If you had people in the market who were politically, socially, and economically mature; if you had people who understood the difference between freedom and license, who understood that what one can do everyone can do; if you had people who recognized the nice balance between public responsibility and private ambition that are the first essentials of a free market, then it is agreed that you would not need regulation. It is on this basis that the Columbus Milk Disributors Association rests its case. That it is a good case, a survey of the record leaves little doubt, for, as this article tries to point out, there is a maturity of thought and deed in Columbus that it is hard to duplicate anywhere else in the Union.

★ ★

For Your Next Job

STOP and CONSIDER the

FLEXIBILITY **of the**

Peerless Vertical Turbine Pump

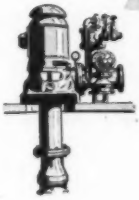
1. AS A DEEP WELL PUMP

For a dependable source of clean water, Peerless Vertical Turbine Pumps are recognized leaders in the field; noted for their adaptability to widest pumping conditions, they embody many exclusive engineering features for extended pumping efficiencies. Install these deep well vertical turbine pumps with the type of drive or combination most suitable to your specific application. Capacities from 15 to 30,000 g.p.m. are obtained from depths to 1000 ft.

2. AS A CLOSE-COUPLE PUMP

You're assured of full turbine pump utility and capacities with an extremely compact installation. Ideal for pumping from short or medium settings. Capacities up to 30,000 g.p.m. are delivered from sumps, pits and surface water sources for booster service, circulating, de-watering and a host of other applications.

3. AS AN APPROVED FIRE PUMP



Install this versatile Peerless Vertical Turbine type Fire Pump, with proper fittings, for a permanent and reliable water supply for adequate plant fire protection. *Underwriters' approved*, these pumps produce from 500 to 2000 g.p.m. against heads to 285 ft. Extremely simplified in piping arrangement.

Engineering Information Available on All Three Vertical Turbine Types

Write to nearest office stating what your pumping conditions are; give diameter and depth of well, distance to water, capacity desired, total head, type of lubrication (oil or water) and type of drive. The bulletin that specifically describes the pump to fit your specific needs, together with appropriate engineering data will be furnished. Plan with Peerless Vertical Turbine Pumps!

PEERLESS PUMP DIVISION

Food Machinery Corporation

Factories: Los Angeles 31, Calif.; Quincy, Ill.; Indianapolis, Ind. *District Offices:* Chicago 40, 4554 North Broadway; New York 5, 37 Wall Street; Atlanta Office: Rutland Building, Decatur, Georgia; Dallas 1, Texas; Fresno, Calif.; Los Angeles 31, Calif.

★ ★

TIRES CAN COST YOU MONEY

(Continued from Page 16)

the truck is heavily loaded the sidewalls are likely to rub together at the bottom with consequent friction which wears off rubber and causes excessive heat. Too great a space between the tires places an undue burden on the outside tire which causes it to drag and scuff when making turns or driving around sharp curves.

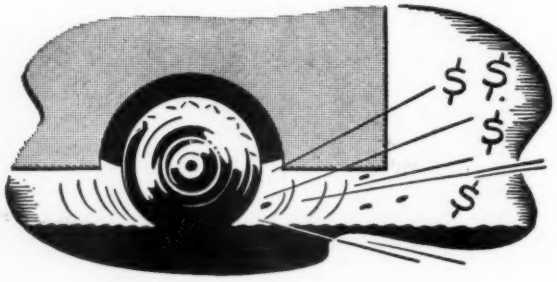
Mechanical Faults Can Hurt

An extremely common cause of tire wear is in the wheel and vehicle irregularities that develop among trucks and automobiles. Most of these troubles can be corrected by a competent mechanic. Garage men and tire manufacturers list eight types of mechanical and vehicular failures as the villains of tire abuse. These failures are described as toe-in, toe-out, camber, caster (this is the backward tilt of the axle or inclination of the king pin at the top), sprung or sagging axle, sprung or twisted frame, grabbing brakes, and worn parts. Uneven and rapid wear is the net result of these mechanical faults. The corrective steps are elementary—get the trouble fixed.

Preventative practices are great stuff whether in tires or medicine. One garage owner, queried on the subject of tire care as a money saving proposition, cited the example of a local milk dealer. A set of bolts on the dealer's truck had become worn and needed to be replaced. It was a minor job that would have cost in the neighborhood of seven dollars top material and labor with only a few hours lay-up of the truck. The dealer was aware of the situation but somehow "just let the thing slide". The garage owner, usually pretty energetic about advising people concerning a repair job, was also up to his ears in work. The bolts were not replaced, that is they were not replaced until the whole rear end of the truck gave way one fine morning with a load of twenty-one cent milk aboard. The garage had to send out the wrecker and tow the truck home. The load had to be shifted, the truck laid up for a day and a half, and charges for repairs were more than fifty dollars.

The story of the boy who put his finger in the dike to plug up the leak applies here. Minor injuries to a tire can rapidly develop into major failures. Neglected cuts start separation between the tread and the cord body. Nail holes allow water to seep in and rot the exposed cords. Obstructions on a vehicle such as bent fenders, mud aprons, and spring clip bolts will scrape and gouge tires. To counteract this constant threat from minor injuries a systematic program of inspection is required.

Tires will wear out. Nobody, not even the manufacturers, maintain otherwise. It is evident, however, that a great many tires wear out a lot faster than they need to. It is also evident that care and the preventative approach combined with quick attention to minor ailments can increase the life of a tire by as much as fifty per cent. A fifty per cent saving on a forty or fifty dollar investment is something worth saving, especially when one considers that it takes the profit on twelve thousand quarts of milk to replace a forty dollar tire.



THESE 93 FACTORS AFFECT TIRE LIFE

Tire Factors

1. Underinflation
2. Overinflation.
3. "Bleeding" hot tires
4. Oversize tires
5. Undersize tires
6. Cuts—neglected
7. Snags—neglected
8. Bruises—neglected
9. Nail holes
10. Duals—mismatched for size
11. Duals—spacing too small
12. Duals—spacing too great
13. Duals—mismatched for type
14. Extended use of boots or blowout patches in good tires
15. "Imperfect" tire
16. Duals—mismatched for type of cord
17. Duals—improper matching of inflation pressure
18. Wrong type tire for job

Vehicle Factors

1. Overloading
2. Swaying loads
3. Concentration of loads
4. Excess overhang loads
5. Toe-in
6. Toe-out
7. Caster
8. Camber
9. Wheel balance—static
10. Wheel balance—dynamic
11. Grabbing brakes
12. Unequalized brakes
13. Sprung axles
14. Sagging axles
15. Sprung frame
16. Twisted frame
17. Worn wheel bearings
18. Loose wheel bearings

19. Loose radius rods
20. Loose "U" bolts
21. Wobbly wheels
22. Worn bushings
23. Bent fenders causing abrasions
24. Mud aprons causing abrasions
25. Spring clip bolts causing abrasions
26. Spring clips causing abrasions
27. Bent rims
28. Broken springs
29. Improper adjustment of dragline
30. Worn king pin
31. Increase of horsepower in same weight vehicle
32. Fifth wheel on trailer
33. Improper placement of tandem axles

Driving Habits

1. Fast starts
2. Quick stops
3. Curb scraping
4. Curb bumping
5. Driving over curbs
6. Excessive speed
7. "Squealing" tires on curves
8. Driving on street car tracks
9. Running over rocks, sharp objects
10. Parking on oily floors
11. Riding edge of pavement with soft low shoulders
12. Improper brake application
13. "Spinning" tires in mud, slush, or on ice

Road Conditions

1. Abrasive road surfaces
2. Rutted roads
3. Highly crowned roads

Tubes

1. Leaking valve caps
2. Loose valve caps
3. Missing valve caps
4. Use of inaccurate air gauges.
5. Irregular air pressure checking
6. Worn tubes
7. Leaky tubes
8. Wrong size tubes
9. Use of creased tubes
10. Improperly mounted tubes
11. Failure to lubricate tube when mounting
12. Use of old valve core
13. Grit, pebbles, etc., between tube and casing
14. Using an unclean new tube (when replacing old tube)

Miscellaneous

1. Atmospheric conditions (hot weather, hot roads)
2. Storing tires exposed to sunlight
3. Storing tires exposed to oil and grease
4. Dirt penetrating cuts
5. Water seeping into cuts
6. Failure to switch tires regularly
7. Wrong size flap used
8. Worn flap re-used
9. Loose tire chains
10. Improper breaking-in of tires
11. Neglect of slow leaks
12. Foreign objects lodged between duals

See that YOUR Producers Use the BEST... *Perfection*

DUBL-CHEM-FACED

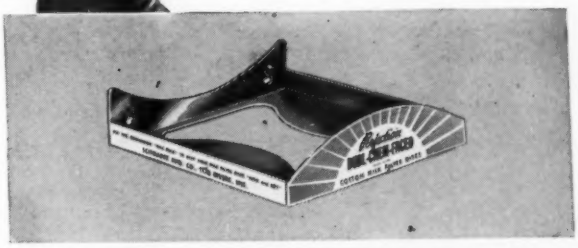
(TRADE-MARK)

MILK FILTER DISCS

at Low Cost!

FREE DISC-DECK

TO PURCHASERS OF THE 3-CARTON SPECIAL PACKAGE



Your Producers Appreciate This Practical Gift

The DISC-DECK is a convenient, rust-proof metal shelf that keeps filter discs high, dry and sanitary, in best condition for use at every milking. See that your producers get the benefit of this DISC-DECK, free!

Rush your order to your supplier

PACKAGED FOR CONVENIENT HANDLING

3 100-disc cartons are banded together with the DISC-DECK, as a single unit. As easy to handle as a single carton.

RATED TOP PERFORMANCE

After exhaustive tests by one of America's foremost milk sanitarians, the new Perfection DUBL-CHEM-FACED Milk Filter Discs have been rated 100% in performance along with other top quality double-faced filters. Further evidence of highest standards of efficiency of DUBL-CHEM-FACED Discs, is the fact that millions have been used successfully on dairy farms throughout America.

It pays to standardize on

Perfection **DUBL-CHEM-FACED** Filter Discs

Made Exclusively by SCHWARTZ MFG. CO., Two Rivers, Wis.

DR. ROBERT F. HOLLAND

Problems of the Industry

DR. JAMES C. WHITE

Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, conduct their question and answer column each month in the "Review". Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, New York.

●

Homogenized Milk Problems

QUESTION—We have recently installed a homogenizer for the production of homogenized milk. Several customers have complained that the milk has a peculiar flat or burnt flavor. What is the cause of this and how can we remedy it? What is the lowest and highest fat test milk that can be homogenized? At what temperature should the homogenizer be operated? Any help that you can give us will be appreciated

A. W., New York.

ANSWER—It is rather difficult from the description you give of the off-flavor in your homogenized milk to tell exactly what your trouble is. Several factors may have a bearing on it. If the flavor is "cooked", your processing procedure may be at fault. The best method of producing homogenized milk is to flash heat the raw to 140° F., homogenize, clarify, and then pasteurize. Homogenization generally increases the temperature of the milk from 3°-5° F. and proceeding in this manner the temperature is about right for pasteurization when the milk enters the holder vat. If the high-temperature, short-time process is used, the added heat is likewise utilized.

This procedure is often impractical, especially in the smaller plants, and so many operators homogenize after pasteurization, and this is satisfactory if the milk is cooled slightly first. Otherwise the increase in temperature may cause the cooked flavor mentioned.

Homogenized milk is also quite susceptible to "sunshine" flavor and this may be your trouble. It shows up distinctly when the bottles remain on the consumer's doorstep for some time before being placed in the refrigerator. Customer education or light-tight porch cabinets may correct this difficulty. You should take every precaution to protect your product from exposure to strong light in the plant also.

Milk can be homogenized regardless of fat test. As with ordinary milk, however, the higher the test the richer tasting is the product. I would not advise dropping the test below 3.5 per cent and 3.7 per cent or 3.8 per cent would be preferable.

The homogenization process can be carried out successfully at any temperature above the melting point of the fat, but the range 120°-140° F. is commonly recommended for milk for fluid consumption.

Filter vs. Clarifier

QUESTION—We are considering buying either a clarifier or a cold-milk filter but cannot decide which is the better. We are having some trouble with bacterial counts and sediment in our homogenized milk. Thanking you,

W. L. S., New York.

ANSWER—Some years ago the dairy and bacteriology sections of the Experiment Station at Michigan State College published a bulletin, No. 84, on the comparison of the clarifier and the filter for processing milk. They state that you cannot expect to reduce your bacterial count significantly by either method although the cold-milk filter seemed to reduce the count more consistently than did the clarifier. Both of the machines tend to break up the clumps of bacteria which are present in the milk and this gives an apparently higher bacterial count, although actually many of the organisms are removed from the milk.

Thus, you cannot expect to solve a problem of high bacterial counts by installing either of these machines. Neither is intended to correct a poor milk supply and we still have to apply good field work to keep our milk quality high before it reaches the plant.

However, in the production of homogenized milk, sediment is always a problem. Unless milk is absolutely free from insoluble material, sediment will show up on the bottom of homogenized milk bottles as a grayish sludge. This means that some method should be used which will insure that no sediment gets into the bottle.

According to the work of the Michigan people, there was no apparent difference between the clarifier and the filter on ordinary market milk, but many operators who are now turning out homogenized milk have found that the clarifier is definitely superior. It seems that there are small particles of sediment which will pass through most filters but are more effectively removed by the centrifugal method.

We cannot definitely say which machine will be best for you because we do not know the size of your operation. It is obvious that a 300- or 400-quart business will not be able to carry the large investment required for a clarifier, since a clarifier for most operations is much more expensive than a cold-milk filter.

To sum up the two methods, we should say that the filter is cheaper, does remove the apparent sediment from ordinary market milk, and may take up less space in the process room. The clarifier will remove more sediment and does a better job where homogenized milk is bottled. Neither installation will effectively reduce your bacterial counts.

If we can be of further help to you with regard to this problem, please feel free to contact us through the *American Milk Review*.

•

Tips On Ladder Use

Too little pride frequently goes before a fall—too little pride in safe ladders and step stools! That's what James W. Dayton, county agent leader in Massachusetts said recently in stressing the importance of avoiding falls by keeping ladders and step stools in good repair and climbing them properly.

Inspect ladders frequently for rusted or loose bolts and nails, cracked, rotted, or loose rungs or supports, he said. Make repairs immediately or get a new ladder. That's cheaper than having an accident, Dayton declared.

Some of the National Safety Council's pointers on the safe use of ladders were suggested by Dayton. They are:

Firmly set the base of the ladder one-fourth of the ladder's height from the wall.

Face the ladder when climbing and use both hands.

Avoid leaning too far out on the ladder—climb down and move the ladder instead.

Clean mud or grease from your hands and shoes before climbing.

Use a rope hoist to raise sharp tools, heavy objects, or bulky materials.

Open step ladders fully and place all four legs on solid ground before climbing.

Dayton warned against standing on chairs, stools, boxes, tables, or makeshift devices not intended for that purpose. Severe injury and death have often been caused by falls from low levels. A safe step stool for the farm home is the safe solution to this problem.

The National Safety Council suggests that step stools be checked for the following safety factors:

Is top sufficiently broad for comfortable standing

Is each step wide enough to stand upon?

Are steps topped with a non-skid surface?

Is stool securely built of strong materials?

Is the base wide so that your weight may be shifted on the top without tipping the stool?

Is it in good repair?

Dairy plant operators, continually confronted with the hazard of slippery floors, should be particularly careful concerning ladder use. It has often been said that most accidents occur in the home. The statement might be elaborated to say that most accidents occur in common everyday situations. The poorly placed ladder, the slippery floor, the neglected stair tread, these are real hazards.

Finest— Newest— Hand filler!

The New Han-D: Tank Capacity, 15 gallons. One set of bottle guides. Only one quick adjustment necessary to accommodate any size or shape bottle.

Here's the new Cherry-Burrell Han-D Bottle Filler and Capper! Ideal for small as well as large dairy plants. The Han-D has sanitary, easy-to-clean contact surfaces of polished, non-corrosive, stainless steel—pays for itself in economy of operation.

Round or square half-pints—pints—quart bottles—even gallon sizes are all the same to the versatile Han-D Filler. Designed for fast, uniform two-valve filling and capping by just one man, the Han-D operates at a capacity of 12 to 14 quart bottles per minute.

See your nearest Cherry-Burrell representative for full details and catalog.

CHERRY-BURRELL CORPORATION

General Sales and Executive Office:
427 W. Randolph Street, Chicago 6, Ill.
Milk and Food Plant Equipment and Supplies
FACTORIES, WAREHOUSES, BRANCHES, OFFICES OR DISTRIBUTORS AT YOUR SERVICE IN 56 CITIES

trendmaker in a great industry

WONDER TOOL OF SCIENCE

(Continued from Page 18)

instrument was designed by Dr. James Hillier and Arthur W. Vance, RCA research physicists.

Shows Virus at Work

Improved methods and devices have increased the effectiveness of the electron microscope as an aid to medical science. Experimental development of a new "double lens" and a new light optical viewer are of particular note. Pictures obtained with the new lens, showing a tiny virus entering and killing a living cell, have been hailed as a milestone in medicine and biology, pointing to a new approach in the war of science on such mass murderers as polio and cancer.

A new electron diffraction camera, using a beam of electrons only a fraction of the diameter of a human hair, can be used to examine and identify specimens of crystalline substance.

Among recent discoveries of value to medicine is one that promises a better understanding of nerve function. Through the use of an electron microscope at the Massachusetts Institute of Technology it was found that the core of human nerve fibre contains many long structures about one-half a millionth of an inch thick, apparently tubular in shape with crossbands spaced at intervals.

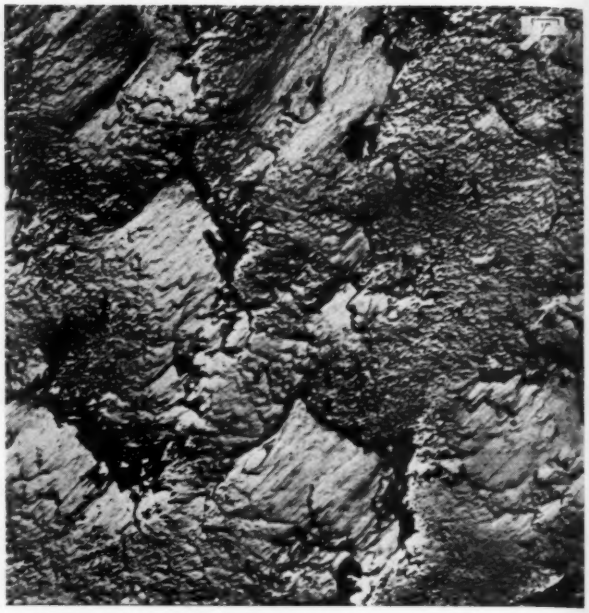
Chemists have used the electron microscope for numerous significant observations. Detailed examination of the fibres of clothing materials, for example, has revealed how the treatment of the fibres with certain types of resins can so increase their resistance that shrinkage and loss of shape may be largely eliminated. This envisages bagless trousers and collars that won't shrink.

Used in Food Research

The electron microscope is currently being used in a modern research program designed to improve taste, texture and appearance of many familiar food products. It is finding answers to problems that have baffled food technologists for years, according to Thomas M. Rector, Vice President in charge of research at the General Foods Central Research Laboratories, Hoboken, N. J.

"We expect this 20th-Century 'eye' to aid us immensely in our endeavor to improve food products sold under our trademarks," said Mr. Rector. "It already has demonstrated that it will have an important bearing on the improvement of chocolate by disclosing the manner in which ingredients are blended together and manipulated in processing."

Most so-called simple foods are made up of hundreds of compounds, many of which are still unknown. Only through the use of an electron microscope is it possible to ascertain how the cell structures are related to each other when present in a complicated cell structure.



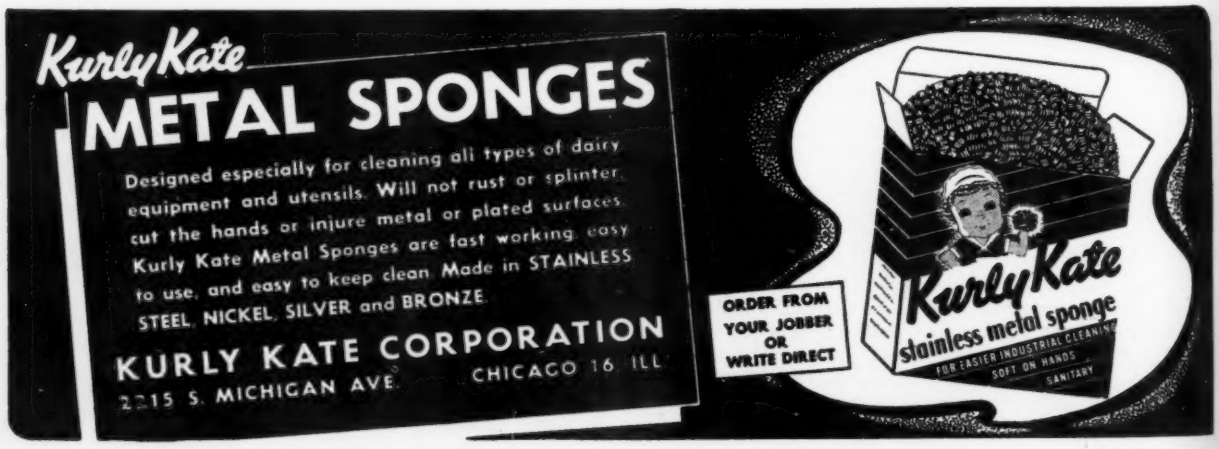
Not a lava flow but the surface of an ordinary tooth magnified 200,000 times. Were a tooth brush bristle photographed at this magnification it would appear four feet in diameter.

Details of human teeth never seen before have been revealed by electron microscopy, which appears to hold far-reaching prospects as an aid to dentistry. One research engineer put it this way: It's as though the darkened laboratories of dental technicians were suddenly flooded with light. With the electron microscope tooth structures whose very existence had been in doubt can be seen, measured, and examined.

Bacteriologists are finding the electron microscope of great value in their research. With electrons, they have discovered that several types of bacteria are armored with solid cell membranes surrounding the fluid protoplasm of their bodies. Other types of bacteria have long, moveable arms called flagella which they use to propel themselves. The true form of these flagella has been observed for the first time with the microscope.

Ever See a Mosquito's Windpipe

Views of a mosquito's windpipe, magnified several thousand times, may appear offhand to have little practical value to science, but knowledge of the insect's respiratory


Kurly Kate
METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL, SILVER and BRONZE.
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SOFT ON HANDS
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system afforded by the electron microscope may prove immensely significant in the development of insecticides.

Production of highly successful synthetic substitutes for natural rubber was assisted by electron microscopy, which revealed factors that aided in the attainment of greater durability and elasticity.

Used extensively in the war effort, the RCA electron microscope emerged from the conflict acclaimed as one of the greatest tools of science of this age. More than 200 of the instruments now are employed in the United States, Britain, France, Holland, China, Russia and Latin America. Virtually every large university and medical research laboratory in America uses electron microscopy, and owners of the instruments in industrial laboratories throughout the country read like a "Who's Who in Industry". The list of companies includes those engaged in such diverse activities as chemicals, paper, explosives, metal, radio products, textiles, oil, rubber, distilling and optics.

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THE CONNECTICUT PLAN

(Continued from Page 7)

the road of LIP with dealers. The auditors were making the rounds of dealers' offices, anyway, Mr. Devine reasoned. Why not have them call about the time that dealers and their bookkeepers were wrestling with the "take-out" forms and give them some friendly help in a new job? They called on every dealer and offered their assistance in making out the first report. They called again in the fall and gave a hand in making out the papers for the distribution. As a result, the reports came in on time, unusually complete and accurate.

Ken Geyer thinks that history, too, has something to do with the acceptance of the plan by Connecticut dairymen. By one means or another, the cooperative which he now manages, has struggled for years to cut down the flood of milk in the spring and fill up the gap in the fall. There has been no problem that has caused more grief. When the CMPA operated on a penalty and refund system, the penalties for under-production in the fall were sometimes almost ruinous to individual members of the Association. When a quota plan was tried, there was an endless procession of members to the head office asking for adjustment of quota.

Nevertheless, before the war, the Connecticut Milk Producers Association had managed to do a creditable job of evening out the annual humps and slumps in the production chart, and farmers knew that the way to make money with milk was to make milk in the fall.

The war changed all of that. There was a ceiling on the price. There was demand for every quart of milk all year around, and it didn't seem to matter whether milk came in floods in May and June, or evenly throughout the year. The quota plan went out the window. There was no price incentive for fall milk, and the state dropped back into an increasingly worse series of ups and downs in milk production.

The fall of 1943 brought the first realization that things were getting out of hand. The fall shortage was prolonged and severe. Dealers scurried around Vermont and New York State looking for extra milk. The CMPA got into the hunt, and the Milk Administrator, and they bought milk in Indiana and Wisconsin before the shortage eased, and had it shipped by rail to Hartford.

When it happened again in 1944, although the situation wasn't quite as bad, leaders in the industry concluded that this had become a chronic ill. It is. The state has not produced enough fall milk, even with its Level Production Program, but it is doing better. With any kind of a break from the weather in the fall of 1948, Connecticut farmers will make a fall production record that will stand out like a lighted Christmas tree.

KILLS
PLANT MAINTENANCE ENEMIES
RUST
FUNGUS
DINGE
LIQUID PORCELAIN-LIKE
DAMP-TEX
Damp-Tex super-enamel can be applied to surfaces despite moisture, heat, fumes and many other extreme conditons. Its water-proof film retards deterioration, increases efficiency, turns depressing, dingy interiors into gleaming, porcelain-smooth beauty. Resistant to fungus, 2% caustic solution, steam and lactic acid. One coat covers. Comes in white and colors. Used in over 4000 plants. Write for our trial offer.
Proved Fungus Resistant by FUNGUS TEST
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STEELCOTE MFG. CO. • ST. LOUIS, MO.
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National Dist. of Damp-Tex Products to the Dairy Industry
General Office: 1243 W. Washington Blvd., Chicago
ALSO SOLD IN CANADA: CREAMERY PACKAGE MFG. CO. OF CANADA, LTD., 267 King St. W., Toronto 2, Ontario.
Canadian Manufacturer: Standard Paint & Varnish Co., Windsor, Canada

HOW TO KEEP CANS CLEAN

(Continued from Page 37)

iron and other metals at temperatures around 140° and above. They, therefore, should not be used for can washing. Years of experience with acid cleaners clearly indicate that the mild organic acids are the only ones really satisfactory for treating the water for can washing purposes.

Acids, however, whether mild or strong, have little effect on the milk fats. This is accomplished by the use of selected wetting agents properly acidified in sufficient quantity to provide ample "lifting" power to lift the milk fats, milk solids, foreign matter and bacteria to the surface of the rinse and wash water so they can be skimmed off and floated away to keep the water relatively clean throughout the entire washing process.

Any acid cleaner which does not have the necessary "lifting" power will not do a good job of cleaning the cans. This is one of the reasons why many acid cleaners on the market have proven unsatisfactory for can washing.

All Water Treated

When acid cleaners are used, all water for washing, rinsing, and sterilizing is treated to prevent lime and scale formation. Sufficient acid cleaner is added to the wash and rinse tanks before starting the washing operations to treat the water to convert it to a suitable cleaning solution. As the cans move through the machine each can automatically releases a definite charge of acid cleaner into the can just before washing and another charge into the rinse water so that all water which is heated is properly treated to prevent scale at any temperature.

With a mild organic acid type of cleaner the optimum temperature for washing is 150-170°F. and for rinsing and sterilizing is 225-230°F., and no lime or scale precipitates at these temperatures. The pumps, pipes and frame of the machine will remain as free from lime as they were when first installed. Less clean up time is needed by the operator because there is no scale to scrape off. The only cleaning necessary is to remove any soil which may adhere to the washer as a result of impingement during the washing process. The machine can be readily cleaned with a stream of hot water and a brush.

The use of high temperatures not only destroys bacteria in the cans but also in the wash and rinse water keeping them practically free from bacteria. Furthermore, the rinse water which is treated to prevent scale, falls back into the rinse tank keeping the rinse water clean and free from milk solids, lime and bacteria. The water then flows into the wash tank continuously displacing the wash water to provide relatively clean water for washing all cans.

The volume rinse is heated to 225° F. under pressure before being released into the can. High temperatures accelerate the removal of fats, destroy bacteria, hasten the sterilizing process and facilitate drying.

The final rinse is the sterilizing media and is heated to 225° F. The treatment of the water lowers the surface tension so that all water drains freely from the cans making them easy to dry.

The use of live steam for sterilizing is unnecessary because 225° F. water does the job more efficiently and at less cost. In a 12 CPM machine up to 10 BHP of steam is saved by eliminating the steam sterilizing jet.

As previously explained air heated to 250°F. will dry a can more completely and more quickly than unheated air.

Advantages of Acid Cleaners

Briefly the advantages obtained from the use of proper acid cleaners may be summarized as follows:

1. ***All water heated is treated to prevent scale***
2. *Pumps, pipe lines and machine are kept clean and at a maximum efficiency because no lime or scale accumulates to reduce their capacity.*
3. *Since all water is treated, constant changes of water is possible without waste of cleaning compound or without waste of B.T.U. Therefore, all cans can be washed in relatively clean water.*
4. *Cans are heated to higher temperatures without lime or water stone deposit and are, therefore, more nearly sterile, drier, and cleaner.*
5. *Since no alkalies are used the residual alkali is kept at the minimum.*
6. *The diversion of all rinse water to the wash tank and the elimination of waste of steam and water cuts the cost of steam and water about 50%.*

Quite often plant operators for one reason or another make the mistake of using alkali cleaners for 2 or 3 days and then change to acid cleaner for 2 or 3 days. This is a dangerous practice, especially if the machine has been designed for acid cleaners using extremely high temperatures and treating all water. Such practice may perhaps be beneficial in a Conventional type can washer designed to operate at low temperatures and for treating the wash water only. However, if the machine is designed to provide for treatment of the rinse water as well as the wash water, and high temperatures are required for all treatments, then the alkali used will cause lime or scale to deposit in the pipes, on the machine, and in the can. Then when acid is again used it is destroyed by the lime and scale which was deposited by the alkali and the result is that neither the alkali or the acid ever reach the can in an effective manner or condition.

Summary

The solution to the problem of "HOW TO GET CANS CLEAN" may be summed up briefly:

1. Make some one responsible for the proper operation and care of the can washer, and see that this responsibility is fully assumed.
2. Keep machine clean, well groomed and lubricated.
3. Use temperatures for all treatments which will provide maximum cleaning, maximum destruction of bacteria and maximum dryness without lime or scale deposit.
4. Never reach or exceed the critical temperature of the cleaning compound being used.
5. Maintain proper strength solution for washing and rinsing to provide maximum cleaning without formation of lime or scale.
6. Use relatively clean water for washing all cans.
7. Select cleaning compound most suitable for the can washer being used.
8. Do not alternately use alkaline and acid cleaners if the temperatures used reach or exceed the critical temperature of the alkaline cleaner.

If this program is followed constantly, clean cans can be had.

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The best index of the true state of affairs in a community or an industry is the "Want Ad" section. The "For Sales" predominate in this months *Review*. Perhaps it is an indication of an economic trend, perhaps it means that new equipment is replacing old equipment. Whatever it is you'll find some interesting stories in the Wants and For Sales. Better take a look.

RESEARCH REPORT

Nine Borden Awards, each consisting of a gold medal and $1,000, were made for outstanding research achievements in 1947, according to the Borden Company Foundation directory issued today.

Administered by eight professional and scientific associations, the Borden Awards were established in 1936 to recognize and encourage outstanding research in the United States and Canada. Sixty-four awards have been made in the past 11 years.

Selected by the associations to receive the 1947 Borden Awards were: Leonard A. Maynard, director of the School of Nutrition, Cornell University, Ithaca, N. Y.; Joseph C. Shaw, professor of dairy husbandry, University of Maryland, College Park; George C. Supplee, president of G. C. Supplee Research Corporation, Bainbridge, N. Y.; Jacob Traum, professor of veterinary science, University of California, Berkeley; Grover F. Powers, professor of pediatrics, Yale University School of Medicine, New Haven, Conn.; Vincent du Vigneaud, professor of biochemistry, Cornell University Medical College, Chester D. Dahle, professor of dairy manufacturing, Pennsylvania State College, State College; Milicent L. Hathaway of Washington, D. C., nutrition specialist for the U. S. Department of Agriculture; and Thomas H. Jukes of Pearl River, N. Y., head of the Department of Nutrition and Physiology, Lederle Laboratories Division, American Cyanamid Company.

The American Institute of Nutrition selected Dr. Maynard to receive the award "for noteworthy services in the field of general nutrition, and for significant contributions to the knowledge of the physiology of milk secretion, of factors affecting milk production and milk composition, and of the requirements of animals for dietary fats."

The award in dairy production administered by the American Dairy Science Association went to Dr. Shaw "for research studies involving the physiology of milk secretion, and for fundamental investigations on acetonemia, including establishment of relationships between its occurrences and chemical changes in the blood, and effect of various feeding and management practices."

Dr. Dahle received the award in dairy manufacturing also administered by the American Dairy Science Association. It was awarded "for research in ice cream manufacture; plastic frozen cream; the 'bound water' in dairy products; electrokinetic velocity of fat globules and its relation to certain

(Please turn to Page 67)

Sterling Research Awards

TWO TROPHIES WILL BE AWARDED to milk dealers and milk processors in the 1948 "Quality Improvement Milk Campaign" sponsored by the Sterling Research Corporation according to an announcement by the company.

The contest, won last year by the Smith Dairy Company of Youngstown, Ohio, has created so much interest that the Sterling Research Corporation found it necessary to increase the number of awards to two. An Award of Merit will be made to a milk dealer and one to a milk processor.

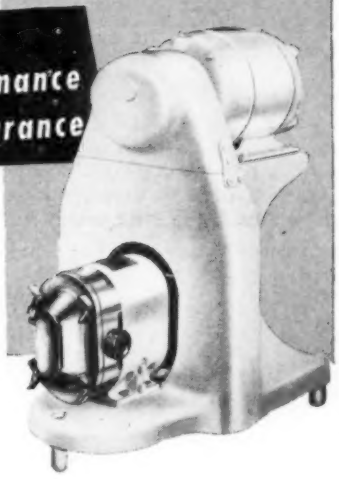
The deadline for the 1948 contest is midnight, March 15.

Waukesha Designers *Streamlined*

This New HIGH BOY

100% SANITARY PUMP

For Better Performance Better Appearance



If you want really modern pumping equipment, combining service, utility, and appearance that will be assets to your plant, by all means see the new WAUKESHA HIGH BOY. Take note of the fully rounded corners, the smooth-finished all-aluminum base and cover that contribute to make the entire unit 100% sanitary. Observe, especially, that all pulleys and belts are fully enclosed — no moving parts exposed.

Maximum convenience was a prime consideration in designing this new WAUKESHA HIGH BOY Pump. With no belt guard to remove or motor table to raise or lower, manual changing of speeds is a quick, simple operation, requiring removal of only four screws.

BEFORE SELECTING NEW PUMP EQUIPMENT

Check These WAUKESHA HIGH BOY Features:

- **Assured Accurate Volume — Adjustable sheave pulley permits quick, easy increase of speed to compensate for any loss of capacity due to ultimate wear of the pump.**
- **40% Speed Increase — Made possible by the use of adjustable sheave driving pulley.**
- **Sanitary Ball-Feet — Allow proper cleaning and drainage between base and floor.**
- **Overhead Motor — Lessens liability of motor trouble due to water conditions.**
- **Compact — Requires less than half of the valuable floor space of ordinary units.**

This unit is recommended for use wherever a V-Belt driven unit is desired, and is especially recommended for use where periodic speed changes may be required.

Write now — for complete illustrated Bulletin covering the Waukesha HIGH BOY 100% Sanitary Pump.

WAUKESHA FOUNDRY COMPANY
WAUKESHA, WISCONSIN

Waukesha 100% SANITARY PUMPS

Dependable Product of a Responsible Manufacturer

NEW MILLION DOLLAR PLANT

Litchfield Creamery Company of Illinois Opens Fine Modern Branch at Warsaw, Indiana — Has Half Million Pound Daily Capacity

TRUE MIDWESTERN FESTIVE spirit was the order of the day, when the doors of the new $1,000,000 branch plant of the Litchfield Creamery Company at Warsaw, Indiana, were swung wide recently for an open house. The Litchfield Creamery makes its headquarters in Litchfield, Illinois. The Warsaw plant replaces an older establishment that the company maintained in that community.

As a part of the Company's public relations program the "open house" invitation to attend the celebration was extended to residents of Warsaw. Several thousand people inspected the new plant and consumed large quantities of the company's fine ice cream and milk.

Official guides were on hand to conduct visitors through the company's new home. The guides explained the functions of the up-to-the-minute machinery and gave the guests an inside look at the streamlined operation of a modern milk handling plant.

A program of entertainment was provided throughout the afternoon and evening. The festivities included a concert by the Warsaw High School band.

State and Local Dignitaries

Prominent State and local officials attended the house warming. Included on the program were Hobart Creighton, State House of Representatives member and Speaker of the House, Mayor Frank Rarick of Warsaw, and Virgil McClery, President of the Warsaw Chamber of Commerce.

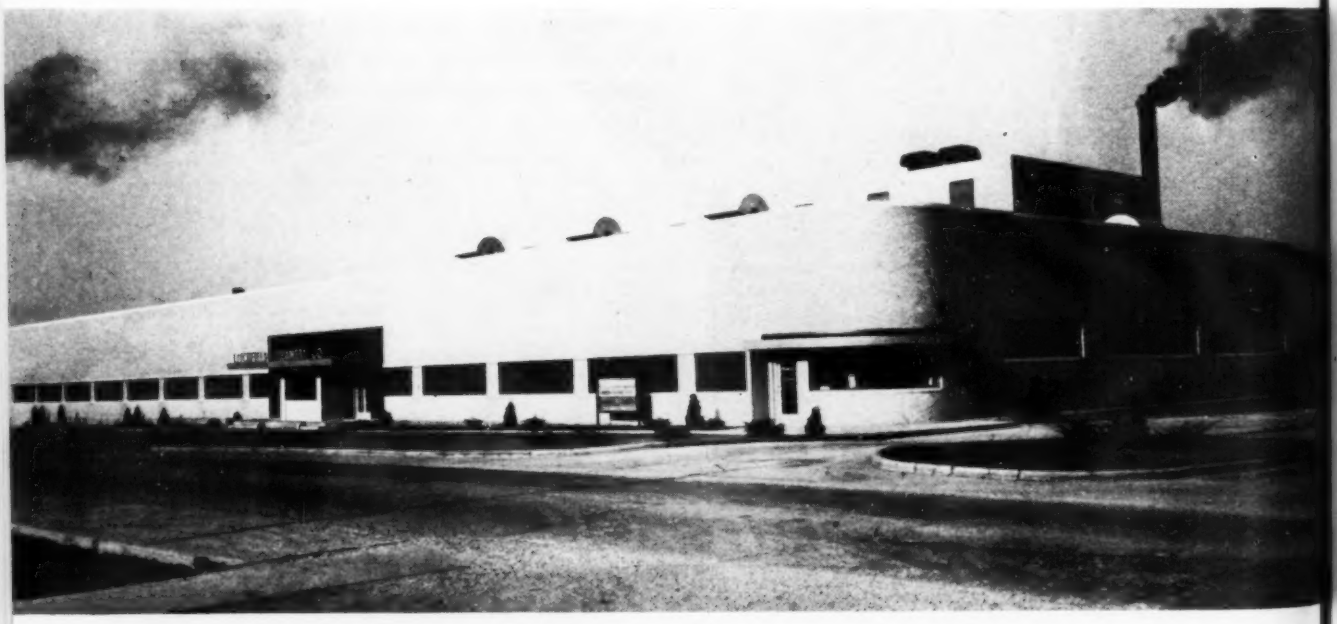
Ground was broken for the new creamery in August, 1946. Construction was completed one year later in August of 1947. Sufficient equipment had been installed by the first of this year to enable processing to start. Company officials expect that all equipment and machinery will be in place and in operation by April.

The new building provides about 65,000 square feet of additional floor space for both processing and warehousing. It is brick construction, with all processing areas lined with glazed ceramic tile. Floors are non-skid floor tile, and all equipment with which milk comes in direct contact is stainless steel, including pipes and other fixtures. All air entering the new plant is filtered and heated or cooled as required, providing ideal working conditions.

The new creamery and equipment is ultra-modern in design. Production is streamlined for high output at minimum operating costs. The chief product to be manufactured at the plant is a canned item consisting of skimmed milk, highly refined vegetable oil, and vitamin A and D concentrate. The product is called Milnot. In addition the plant will produce large quantities of evaporated milk, butter, condensed skimmed milk, and fluid cream. Seventy-seven persons are employed at the present time.

Railway sidings at the new plant are sufficient to permit handling of 45 cars in and out per week via the Winona R. R. Company which has interchange locally with the Big Four and Pennsylvania. Sufficient shipping space is also available to load 12 trucks at one time.

Officials estimate that the new plant can handle at least one-half million pounds of milk per day. This is double the volume handled by the present Warsaw plant.



Modern structural design with extensive use of plain surfaces gives a mid-twentieth century label to Litchfield Creamery Company's new plant. The plant which began operations in January, is expected to be working full time in April. Plant has a daily capacity of half a million pounds.

Prominent figures attending the opening of the Warsaw plant included Hobart Creighton, Speaker of the House in the Indiana Legislature, Howard Thompson, Manager of the Warsaw plant, Charles Hauser, Secretary and General Manager of the Litchfield Creamery Company, James Conway, WBBM Radio Announcer, Virgil McClery, President of the Warsaw Chamber of Commerce, and Frank Rarick, Mayor of Warsaw.

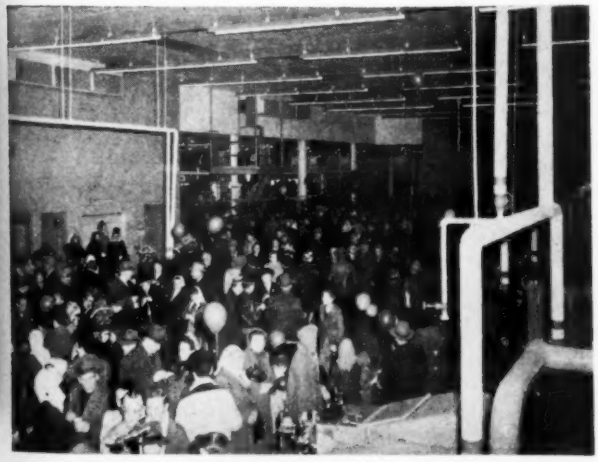
Watch Those Checks

A recent pronouncement of the Post Office Department makes it clear that care should be used in the handling of producer checks without using the mails.

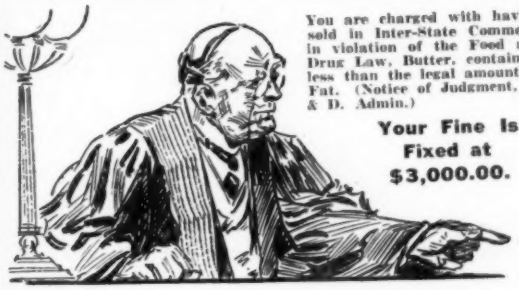
The Department says:

"Checks in their ordinary form containing only the names of the drawer, payee, bank upon which drawn, amount of money and date of issue, are not 'Letters' within the meaning of private express statutes, and, hence may be conveyed by private express without violating said Statutes

"However, if the checks show upon their face, or by stubs attached to them, or by statement sheets accompanying them, such information as the weight of milk, quality, price, butter fat content, the test, deductions for hauling, and the like, then both the checks and the statements or settlement sheets are 'letters' within the meaning of the private express statutes, and may not be conveyed outside of the mails without the payment of postage thereon."



Balloons and dairy products added zest to the gala celebration that saw thousands of midwesterners attending the "open house".



You are charged with having sold in Inter-State Commerce in violation of the Food and Drug Law, Butter, containing less than the legal amount of Fat. (Notice of Judgment, F. & D. Admin.)

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THOSE WORDS BROUGHT RUIN TO THE HONEST EFFORTS OF A LIFETIME.

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April is Cancer Control Month — Give to your Local Cancer Committee to help fight this deadly enemy.

PENNSYLVANIA CONVENTION

Record Breaking Attendance at Harrisburg Marks Sixteenth Annual Meeting of Pennsylvania Association of Milk Dealers in February

ALL ROADS LED TO HARRISBURG late last month as Pennsylvania Milk Dealers gathered at the Penn-Harris Hotel for their Sixteenth Annual Convention. More than 400 strong, the dairymen heard well known men present the current news and views of the industry.

Concern with public thinking on the dairy industry, particularly with regard to prices and profits, was reflected in a number of reports and discussions. In his annual report to the Pennsylvania Association of Milk Dealers, Benjamin G. Eynon of Harrisburg, Executive Vice-President of the Association, pointed out that milk dealers in the State were realizing a profit of only 2.8 cents of their sales dollar.

Typical Small Business

"The milk business is a typical small business," said Mr. Eynon. "The average sales of 904 fluid milk dealers in Pennsylvania in 1946 amounted to $368,056, and profits averaged $10,379. If you add to this the average sales of $185,027 made by 929 additional producer-distributors, the average profit for the year is reduced to $5,180."

Mr. Eynon noted that Pennsylvania dealers buy milk from 52,549 dairy farmers, and have 28,904 employees and a payroll of over $75,000,000 a year. Eighty cents out of every dollar the consumer pays for milk, he said, goes to the dairy farmer and for wages paid for labor.

"Despite misleading statements, some of which have appeared in the press," he said, "the price of milk has not changed in cost areas of the State since last July.

"Milk is still the cheapest of all foods," Mr. Eynon concluded, "and has increased only half as much as other food products."

Mr. Eynon's position was supported and amplified by the views of George G. Diffenback, Public Relations Director for Abbotts Dairies in Philadelphia and by representatives of Dairy Council Inc. of Philadelphia. Public misconception of dairy company profits and the long range significance of this misconception were declared to be probelms of major importance confronting dairymen.

Meaning of Cooperation

"Doing things together that should be done together and doing things separately that should be done separately" is the real meaning of cooperation according to O. H. Hoffman, General Manager of the Interstate Milk Producers' Cooperative Association of Philadelphia. Mr. Hoffman entered an intelligent plea for producer-dealer understanding. "Farmers should be aware of the details of marketing", Mr. Hoffman said, "and should improve quality and production so that it is more in line with the requirements of the market." The speaker declared that dealers on their part should "set a good example of housekeeping and sanitation". One of the most common points of trouble between producers and dealers is in their buying and selling relationships. "Dealers should carry producers during the flush season". Mr. Hoffman said, "and conversely, producers should stick by their dealers during the short supply period."

New dairy machinery was discussed by F. G. Cornell, General Manager of Jenson Company of Bloomfield, N. J. Mr. Cornell saw little new machinery on the market at the present time due to the "catching up process" that has been going on with equipment manufacturers since the war. New developments for the near future included a pipe washing machine, mechanical dumper, automatic detergent control, HTST control in one panel, better and more rapid acting thermometers for checking and testing samples, and complete stainless-steel heat exchangers. Mr. Cornell pointed out that the fundamental problem of dairy machinery was to prevent undesirable chemical changes from taking place.

New officers of the PMDA toast retiring President Ryder, at the Associations 16th Annual Convention. In the picture from left to right are: Benjamin Eynon, Vice-president, H. V. Jones, Vice-president, W. H. Colteryahn, President, J. Lee Miller, Vice-president A. M. Ryder, retiring President, and Col. Willis F. Daniels. Mrs. Frankie Wrona, of Harrisburg is pouring.

Turning the Price Corner

"The dairy industry is approaching a corner on the road to lower prices", was the opinion of Walter D. Hunnicutt, Supply Department, National Dairy Products Corporation. Mr. Hunnicutt predicted increasing difficulties with a short milk supply in view of reduced cattle population and high grain prices. The speaker called upon the industry to open the closed markets such as New York City and to bend every effort toward encouraging more uniform production. "Production has declined in the face of increasing population", Mr. Hunnicutt said, "and for 1947 is estimated at 120.15 billion pounds and in 1948 may drop as low as 116 billion pounds." The speaker pointed out that dairy cow numbers have dropped 7 to 10 per cent since 1945.

Officers elected by the Pennsylvania Association of Milk Dealers included W. H. Colteryahn, Pittsburg dairyman as president.

Vice-presidents elected were: H. V. Jones, Woodlawn Farm Dairy Company, Scranton, for the Eastern Region; J. Lee Miller, Williamsport Milk Products Company, Williamsport, for the Central Region; and James H. Laher, Rieck-McJunkin Dairy Company of Altoona, for the Western Region.

Daniel S. Adams, St. Lawrence Dairy Company, Reading was elected Secretary; Benjamin H. Wolfe, Harrisburg Dairies, Harrisburg, was elected Treasurer; Benjamin G. Eynon, Harrisburg, was elected Executive Vice-President.

Cultured Milks Enriched

By WALTER SPILKAY, B.Sc.

THE AVERAGE OPINION of cultured milk is that it makes a refreshing drink. While such is very true, it can also be prepared so as to serve a far greater purpose as a corrective for various intestinal diseases. The therapeutic use of cultured milk has been hardly publicized. One good reason, I believe, is that so much of our commercial cultured milk is being prepared and processed with contaminated and unbalanced cultures, thereby minimizing, or losing, their therapeutic effects.

If cultured milks, whether they are buttermilk, yogurt, kefir, or kumiss, are cultured and processed so that they are free of contaminants and balanced for mineral enrichment, they can offer reasonable proof of their therapeutic value in the rehabilitation of intestinal diseases which arise from putrefactive conditions.

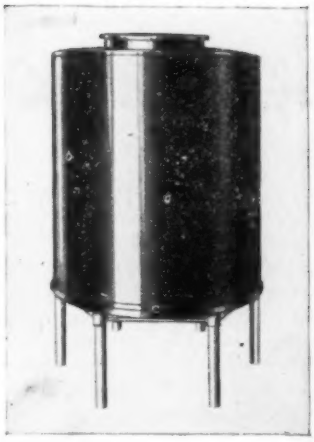
Intestinal diseases are, in a large percentage of cases, the results of auto-intoxication, putrefactive conditions that are more or less self-imposed. According to Dr. George Herschell of London, "It has now been definitely proved that the abnormal putrefactions in the intestines are mainly affected through the agency of anaerobic bacteria."

A milk which has once been coagulated shows very little tendency to re-coagulate in the stomach. A cultured milk prepared and processed free of contaminants and balanced for mineral enrichment is well tolerated and useful in the treatment of delicate or sick infants. Acid-producing bacteria, in a sugar-containing medium, are able to arrest the growth of putrefactive organisms when becoming established in the digestive canal, and diminish the vitality of proteolytic bacteria.

In a cultured milk the casein is precipitated by the lactic acid, either through spontaneous coagulation or artificial souring. It then becomes the most digestible of foods, due to the part of its work by the presence of the lactic acid. The cultured milk is quickly digested by the stomach and intestines, and so completely is the greater part of it absorbed, that bowel movements become scanty and almost odorless. However, its values as a therapeutic can only be realized by incorporating sterility in processing, the use of cultures which are free of contamination and balanced for mineral enrichment, with their chemical and physical properties showing hardiness, activity, flavorful, aroma in a nascent state, and buffered for a constant acidity.

Lactic ferment cultures contain three types of bacteria which are all essential for a well-rounded initial culture. They consist of the *Streptococcus Lactis* and the associated organisms, commonly referred to as *Streptococcus Citrovorous* and *Streptococcus Paracitrovorous*. While the two latter organisms will ferment lactose into lactic acid in small amounts, they are needed to ferment citric acid through the formation of other compounds, and which are the essential elements for the desired flavor. These organisms, in addition to the *Lactobacillus Acidophilus*, if buttermilk is cultured, are all of vital importance to develop a good initial culture, if specific therapeutic results are to be realized. It must be understood that only pure strain organisms are to be isolated and multiplied through bacteriological means. Some cultures require slight variations in their incubation periods, which is due to the acid content of the original milk, and to the amount of the inoculum.

If the dairy industry would process fermented milks by considering more scientific facts, and use cultures and starters that are minerally balanced and enriched for specific therapeutic values, then sour milk, by its various names, will in due time exceed the sales of fluid milk, and also result in more profit to milk processing plants.



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NORTH CAROLINA ASSOCIATION

Tarheel Organization Will Sponsor Group Insurance Plan for Members and Employees — Sets Two Hundred Million Dollar Industry for State as Goal

THE NORTH CAROLINA Dairy Products Association—meeting in annual convention in Raleigh on January 15-16, at Hotel Sir Walter—became a pace-setter when it approved a plan whereby the Association will sponsor and operate on behalf of its membership a group life-health-hospital insurance plan covering all employees and all members participating.

The North Carolina General Assembly last spring passed legislation permitting trade and industry associations in the Tar Heel State to sponsor and operate group insurance plans for the benefit of members and their employees, with resultant great savings to the employers and a bettering of employer-employe relations.

Adoption of the group insurance plan was recommended by a special Insurance Committee of the Association, made up of George S. Coble, chairman; W. C. Thacker and George Covington. Officers of the Association were directed to work out details of the plan and to select the insurance company to handle the business. Group insurance premium rates, being based upon the number of people in the particular plan, a consolidation of all employees of participating employers will result in extremely low rates.

New Officers Elected

E. D. Mitchell, of Biltmore Farms, Asheville, was elected president of the Association for the year, to succeed Ralph H. Scott. New vice-presidents elected were L. A. Wolfe, Sunrise Dairy, Gastonia; C. A. Williard, Lindale Dairies, Inc., High Point; and J. D. Kilgore, Pine State Creamery, Raleigh.

Re-elected were L. L. Ray, executive vice-president, W. L. Clevenger, secretary, and C. B. Martin, treasurer.

Six new directors were elected to serve during the coming year with six hold-over members of the directorate. They were V. J. Ashbaugh, Durham Dairy Products, Durham; W. F. Redmond, Superior Dairies, Statesville; Charles L. Rackley, Southern Dairies, Asheville; R. L. Burrage, Cabarrus Creamery Company, Concord, J. D. Kilgore and C. H. Williard.

Hold-over directors are George L. W. White, White Ice Cream Company, Raleigh; Ralph H. Scott, Burlington, Melville Dairy; L. A. Wolfe, Gastonia, E. D. Mitchell, Asheville; George S. Coble, Lexington, of Coble Dairy Products and E. L. White, Wilmington, of the White Ice Cream and Milk Company.

A highlight of the convention was a panel discussion on the subject "The Need—The Plan—The Result—of an expanded dairy program for North Carolina", which served as a kick-off for a program being sponsored by the Association and State agencies to build the dairy industry in North Carolina from a $68,000,000 annual industry to one of $200,000,000 annual stature.

Dr. Clarence Poe, Editor of the Progressive Farmer, served as moderator of the panel discussion. Participating in it were D. Hiden Ramsey, Editor of the Ashville Citizen-Times, A. L. Reach, President of the North Carolina Press Association; Garland Johnson, banker and mayor of Elkin, N. C.; John D. Gold, Editor-Publisher of the Wilson, N. C. Daily Times; Harvey Dinkins, Farm Editor of the Winston-Salem Journal and Dr. J. H. Hilton, Dean of Agriculture, North Carolina State College.

This panel discussion brought out the fact, demonstrated by pictures presented by Editor Dinkins, that through proper planning, dairy farmers can have from near year-round grazing to full 12-months grazing in North Carolina, depending upon the locality in which they operate. Newspapermen members of the panel pledged the full support of the press of the State in promoting the campaign to build dairying to a $200,000,000 annual industry.

There was agreement by the panel members that both land and agricultural labor is being "sadly wasted" in North Carolina through the State's dairy industry being as limited as it is. Dean Hilton showed that in 1946 eighty-three per cent of North Carolina's cash farm income came from field crops, and only 17 per cent came from dairying and livestock, but that only 25 per cent of the State's cultivated land that year was required to produce the crops, as against 75 per cent of the acreage being devoted to dairying and livestock.

Improved Feeding Necessary

"The answer", said Dr. Hilton, "lies in better pasturage practices and in the growing of more and better feed crops to be fed to cattle on the farm." He added that it requires only 40 man days of work to produce an acre of tobacco, North Carolina's main cash crop, "which means there is a tremendous waste of labor unless the tobacco farm worker has something to do during the long periods he is not engaged in raising this one crop."

Banker Johnson assured Association members that the banks of the State stand ready and willing to provide adequate capital to build the industry to the desired goal of $200,000,000.

Following a report by George S. Coble, President of the North Carolina Dairy Foundation, sponsored by the Association and the dairying industry generally to supplement and expand the Dairy Division of North Carolina State College, The Tar Heel Supplymen's Association, also meeting in annual convention with the Dairy Products Association, made a grant of $25,000 to the Foundation as the first installment on the $25,000 grant. He explained, in making the presentation, that his group had set up a "re-budgeting plan whereby 75 per cent of the money the Supplymen usually spend on entertainment at the convention as well as certain other funds, are now being diverted to the work of the Dairy Foundation."

The check was accepted by Dr. Hilton on behalf of the Foundation, who pledged the full support of the College in carrying on the program to increase and expand dairying in North Carolina through providing more trained personnel in all phases of dairying.

Tar Heel officers for 1948 are Hase H. Smith, Greensboro, of the B. M. Newell Company, President; Fred S. Means, Charlotte, of the Cherry-Burrell Corporation, Vice-president; and J. F. Neeley, Raleigh, of the Garland C. Norris Company, Secretary-treasurer.

The convention program had a full list of prominent speakers, including Governor R. Gregg Cherry, who pledged the help of all State agencies in expansion of the dairy industry.

RESEARCH REPORT

(Continued from Page 61)

dairy phenomena; production of cheddar and grating type hard cheese, properties and uses of dry non-fat milk solids and whole milk."

Dr. Supplee was selected for the award administered by the American Chemical Society. He was honored "for research including development of first practical methods for commercial irradiation of milk; investigations on keeping quality of milk powder, development of methods for packing milk powder in inert gas; value of casein and milk protein in control of peptic ulcers; isolation of pure natural riboflavin from whey and wastes resulting from milk sugar manufacture."

Dr. Traum's award, administered by the American Veterinary Medical Association, was "for significant contributions to the control of diseases of dairy cattle, with especial reference to his researches on various aspects of bovine tuberculosis, brucellosis, and foot-and-mouth disease."

Dr. Powers, who made outstanding contributions in the feeding and nutrition of children, received the award administered by the American Academy of Pediatrics.

Dr. du Vigneaud was selected for recognition by the Association of American Medical Colleges. He was cited "for a continuation of his investigation of biotin and transmethylation, a demonstration based on the use of isotopes of the mechanism of the conversion of methionine to cysteine, and the synthesis of penicillin G. Although other investigators using synthetic methods had obtained minute yields of antibiotic activity as measured by bioassay, du Vigneaud and his associates improved the methods of syntheisis, purified the product,

The American Home Association selected Dr. Hathaway to receive a Borden Award "for research on the food requirements of humans, particularly the synthesis and excretion of thiamine and riboflavin in humans on synthetic and natural diets."

The award that went to Dr. Jukes was administered by the Poultry Science Association. He received it "for researches in the field of avian nutrition and biochemistry, with especial reference to the determination of the roles of pantothenic acid, riboflavin, choline, and other members of the Vitamin B complex."

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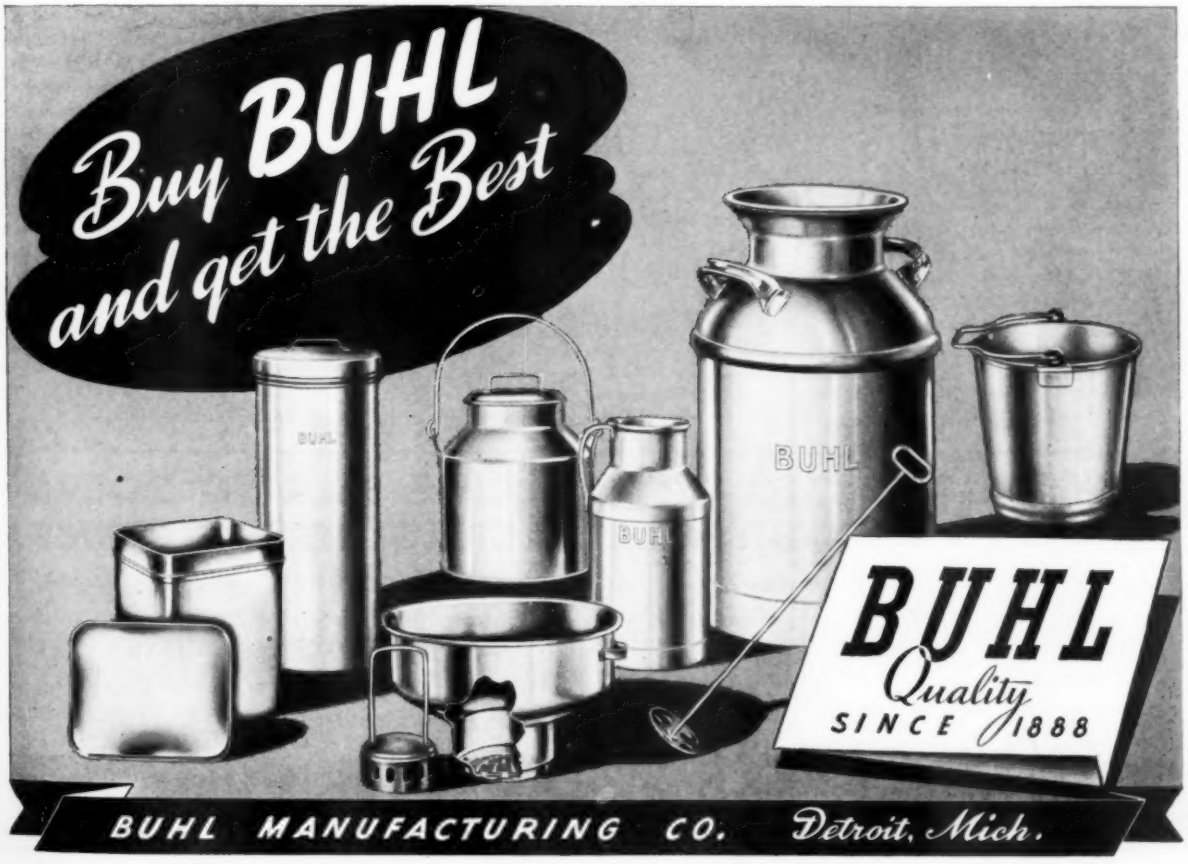
Large Michigan Meeting

More than two hundred dairymen met for the Fourteenth Annual Convention of the Upper Peninsula Dairy Manufacturers Association at Marquette, Michigan, February 13 and 14. Leadership in the industry and economic trends were the major subjects of discussion.

The Badger trophy, outstanding dairy award in the Upper Peninsula region, was won by E. J. Nystrom of the Bessemer Creamery, Bessemer, Michigan.

Officers elected included William Plansky, Escanaba, President; Walter Nelson, Manistique, Vice-President and O. D'Mour, Gladstone, Secretary-Treasurer. New directors were Walter Fassbender, Marquette, George Girrbach, Sault Ste. Marie, E. J. Nystrom, Bessemer, and Walter Nelson, Manistique.

The convention selected September 10 as the date for the Fall Meeting to be held at Blaney Park and February 10, 11 and 12, 1949 for the Annual Convention.



CONNECTICUT CHAMPIONS

(Continued from Page 29)

as some phases of extra-curricula activities. As yet there is no record of a college offering the well known Board, Room, and Tuition that is standard remuneration for some of the more talented members of the collegiate athletic world. There is, however, an avid interest on the part of dairy teams to learn the techniques and training methods of their competitors. Coaches too, tend to guard their secrets much as a football mentor hoards his gold plated trickies. And, after all why shouldn't they? The Connecticut team says that wherever they compete the questions are the same. "How d' you guys do it?" "What do you do for training?" "What have you got besides rabbit's feet?"

Talent and Work

The secret of the teams success is not particularly profound. Whether it is football or dairy products judging the principles are the same; talent, good coaching, and hard work. Dairy products judging is largely a matter of taste. Taste is one of the senses. It varies in degree of sensitivity even as eyesight varies, or touch, or hearing. It can be cultivated. It can be brought to an almost unbelievable accuracy through proper training. Anybody can taste. Anybody can develop the sense to a high degree of discernment. But here, as in other fields of human endeavor, there is talent. Some people have it, some never will have it. The Connecticut team has talent and no mistake.

To guide this talent, to bring it as close to perfection as possible is the coach's job. Talent is involved here too, and again Connecticut has it. There are two coaches at Storrs, both are "red hot" in their enthusiasm for judging competition and both command an impressive record in the field. E. O. Andersen, Professor of Dairy Manufacturing, has been coaching dairy products judging teams since 1925. A graduate of the University of Minnesota with a Masters Degree from the same institution, he has been both a teacher and a businessman. Milk and cheese are his specialities. The other half of Connecticut's two man coaching team is L. R. Dowd. A one time winner of a DISA scholarship for judging, Professor Dowd is a dairyman of wide experience. Graduated from Michigan State in 1931 where he studied under Professor M. G. Trout, he took a Masters Degree at Purdue. He has taught at Purdue and at Connecticut, worked in the dairy industry at Saulte Ste. Marie and served as a Sealtest Inspector for National Dairy.

> When the town of Lancaster early in January put pasteurization regulations into effect it brought to a total of 100 Massachusetts communities now requiring that all milk be pasteurized or certified. All municipalities in the State with more than 25,000 population are included in that list, and out of 46 having a population between 10,000 and 25,000 only 10 have yet to take action.

Flavor Important to Industry

These two men start their coaching with a theory. Actually it is more than a theory, it is a truism fundamental to the industry. It is that the higher the quality of the product, the higher the consumption. In order to raise the quality of the product it is necessary to have men and women of discrimination in the industry. Excellence in judging is an important step in the right direction. Training in this skill is necessary in order to locate and eliminate problems in flavors, texture, and similar considerations. The first phase of eliminating trouble is to locate the trouble. Only a person with a highly developed skill in judging dairy products is qualified to or can do this successfully.

The actual problem of coaching a dairy products judging team is a problem in work. "The tasting process is continuous" Professor Anderson says. "You cannot take it up and lay it down haphazardly, you've got to keep at it. Just as a musician must keep practicing so must a judge of dairy products keep tasting." Before the team went to Miami there was a week of concentrated work, tasting, tasting, tasting. The Dairy Department offers a course in flavor analysis which members of the team take. But these are merely the organized translations of a system that says the secret of good judging lies in work and more work with the products to be judged.

Both Professor Anderson and Professor Dowd take a practical view of their activities with student judging. "Good sorting at the receiving station is of vital importance in getting a quality product", Mr. Dowd says. "Most of the inspectors on the receiving platforms are too hurried or lack the training necessary to do a good job of sorting," he points out. Mr. Anderson feels that flavor is the most important characteristic of any food product. He cites the care and money spent on flavor in such beverages as tea and coffee, soft drinks, wines and liquors. Both men see increased attempts at standardizing products in the dairy industry. And both men are insistent on the necessity of good taste training as the first essential to standardization.

Have Set Enviable Record

Last year the University of Connecticut Dairy Products Judging team captured first place at the Eastern States Exposition at Springfield, Massachusetts and First place at Miami in the Collegiate Students International Contest. The only other important contest was in California which the Connecticut team did not enter. Since 1925 Connecticut teams have won the Eastern States contests six times. They have placed second in the International contest three times and been third once. That is an enviable record. But for those who are wondering about the Connecticut magic Professor Anderson and Professor Dowd can offer little encouragement. "There ain't no such animal" is their reply. "A lot of hard work" is their explanation. And that's not magic, that's the way of the world.

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Modified Radiant Heating Installed in Keystone State

Pennsylvania Food and Dairy Plants Are Provided with New Type Heating and Freezing Arrangement

A NEW FOOD-FREEZING PLANT and a dairy, both in Pennsylvania, have been equipped with a unique system of modified radiant heating to prevent concrete floors from buckling and insulation from disintegrating in freezing rooms and refrigerated storage rooms.

The installations, which make use of wrought iron pipe coils embedded in concrete, were designed by V. C. Patterson & Associates, mechanical engineers, and Buchart Engineering Corp., architects and engineers, York, Pa.

Frost Causes Buckling

Essentially the same problem was involved at the Adams Apple Products Corporation, Aspers, Adams County, Pa., and the Penn Dairies, Inc., Lancaster, Pa. Numerous instances have been recorded where, despite the amount of insulation used, frost has accumulated under the structural slab. In such cases, the insulated floor frequently becomes buckled over for a period of time and thus is destroyed. Frosting of the ground underlying the structural slab is the common hazard when low temperatures are employed.

At the dairy and the food plant, the radiant heating systems were installed in approximately the same manner and are similar in design.

The main freezing room in the Adams plant-used primarily for freezing apples, strawberries, etc.—is about 10 feet x 75 feet. An ammonia low temperature, two-stage refrigerating system is employed. The structural floor slab, a layer of insulation and the finish floor slab each are 6 inch thick. In the structural slab, ¾ inch wrought iron pipe coils were buried during the early stages of construction. Wrought iron was used—as it is for most radiant heating systems—because it is resistant to attacks of corrosion as illustrated by the long-life service records of this material in such applications as brine lines for skating rinks and refrigeration systems. The pipes are in the form of a grid and spaced on 36-inch centers. Similar installations are in the freezing storage room having temperatures ranging from 0° to -5° F., and a freezing tunnel with -30° F. temperature.

Instead of using water protected by anti-freeze compounds, the designers selected No. 2 fuel oil as the heating medium that is circulated through the coils. The oil is heated to about 40° in a small heat exchanger connected to the plant steam lines. The designers estimate that the heat output is sufficient to prevent freezing of the insulation, even when the temperature is reduced to -30° F. in the rooms. The radiant heat does not penetrate the finish floor slab, however.

A regular radiant heating system is used at the Adams plant for offices, rest rooms and entrance lobby. This system uses hot water as the heating medium and the 1-inch wrought iron pipe coils are spaced on 12-inch and 17-inch centers. Closer spacing of the pipe enables the greater heat output per square foot of floor area necessary to establish comfort conditions.

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H. P. Hood & Sons — June Dairy Products Co., Inc.
Lambrecht Foods Co. — Rieck McJunkin Dairy Co.
Sheffield Farms Co., Inc. — Western Maryland Dairy
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NATIONAL APPOINTMENTS

R. J. Wise, Harold H. Kendall Move Up in National Dairy Products Corp.

Raymond J. Wise, president of Detroit Creamery Company, a National Dairy subsidiary, has been named an assistant vice-president of National Dairy Products Corporation and regional director of the parent company's milk and ice cream operations in the upper Mississippi-Missouri valley area, it was announced today by L. A. Van Bomel, president of National Dairy.

The territory under Mr. Wise's supervision will include Indiana, Illinois, Kentucky, Missouri, Nebraska, Wisconsin and

Raymond F. Wise

Howard H. Kendall

parts of Ohio and Tennessee. His headquarters will be in Chicago. He succeeds H. H. Neel, who was recently elected a vice-president and director of National Dairy, and who is being transferred to the parent company's New York office.

Mr. Wise will be succeeded as president of Detroit Creamery Company and supervisor of subsidiary milk and ice cream companies in Michigan and Toledo, Ohio, by Harold H. Kendall, executive ice-president of the Detroit company. Mr. Kendall will also become a member of the National Dairy operating committee.

President of Detroit Creamery Company since 1939, Mr. Wise previously was president of the Luick Ice Cream Company, Milwaukee, and Chestnut Farms-Chevy Chase Dairy Company, Washington. Son of one of the founders of Wise Brothers Chevy Chase Dairy, Washington, he was born and raised on a dairy farm. He started his business career as a route man for his father's company, later becoming sales manager and, finally, president of the company.

He is a director of the International Association of Ice Cream Manufacturers and a member of the Detroit Board of Commerce, the Michigan Manufacturers Association and the Detroit Community Chest. He is married and has three children.

Mr. Kendall, who was born in Palmer, Mass., started in the dairy business as assistant comptroller of Tait Brothers, a Springfield, Mass., firm which later became a part of the General Ice Cream Corporation. He became assistant comptroller of National Dairy in 1929, and went to the Detroit Creamery Company as vice-president and comptroller in 1933. He became executive vice-president in 1942. He is married and has three children.

●

SOLVAY CHANGES ANNOUNCED

Solvay Sales Division, Allied Chemical & Dye Corporation, New York, has announced the following changes in its branch office organization:

Woodward Allen has been appointed manager of the branch office at Charlotte, N. C., covering the Southeastern territory. Mr. Allen, who succeeds the late Harral O. Pierce, has been with the Solvay organization for 28 years, serving as manager of the Boston office since 1930.

M. S. Johnson succeeds Mr. Allen as manager of the Boston office, which serves New England. Mr. Johnson, who has been assistant manager of that branch, joined the organization in 1926, and recently came to Boston from St. Louis, Mo., where he had been branch manager since 1937.

H. G. Phillips, Jr., formerly a salesman in the Cincinnati territory has been appointed to succeed the late Brice S. Hull as manager of the Pittsburgh branch office. Mr. Phillips has been a member of the Solvay organization for 21 years, having served most of that time in the Ohio area.

H. W. Causey, has been named assistant manager of the Charlotte office, and M. F. Kennedy has been appointed assistant manager at Pittsburgh. Both Mr. Causey and Mr. Kennedy have served as salesmen in their respective territories for several years.

All of the above changes will be effective February 1, 1948.

Effective January 1, 1948, H. R. Stoothoff was named assistant manager of the Chicago branch, and W. H. Floyd became assistant manager at Cincinnati. Mr. Stoothoff and Mr. Floyd have been sales representatives in the Chicago and Cincinnati territories.

●

NEEL CHOSEN DIRECTOR

L. A. Van Bomel, president of National Dairy Products Corporation, announced recently that Harrell H. Neel of Chicago has been elected a director of the company. Mr. Neel, who became a vice president of the company a month ago, is being transferred to New York, where he will join the executive management staff, Mr. Van Bomel stated.

Since 1946 Mr. Neel has been in general charge of National Dairy Milk and ice cream operations in the Middle West. Previously he was president of Ewing-Von Allmen Dairy Company of Louisville, Ky., having started his career as a milk wagon driver with that company in 1911.

●

GIRDLER CORP. APPOINTMENTS

Louisville Firm Names McKinnis and Barrick to Important Posts

Ronald B. McKinnis and Gaylord L. Barrick have been appointed manager of the technical services of the Votator Division and head process engineer in the Votator Division respectively it was recently announced by The Girdler Corporation of Louisville, Kentucky.

Mr. McKinnis has been associated with the food industry since his graduation from Williamette University. He was a fellow of the Mellon Institute and has been a consultant on canning, freezing, glass containers and other food proces-

Ronald B. McKinnis

Gaylord L. Barrick

sing problems. He has also developed equipment and methods for processing fruit juices. He is a member of a number of food and scientific associations.

Mr. Barrick, a native of Brazil, Indiana is a graduate of Rose Polytechnic Institute and the University of Louisville. He joined the Votator Division of the Girdler Corporation in December 1943. He joined the process department in 1946.

●

BONUS FOR EVERYBODY

At the recent Annual Bonus Banquet given by Schwartz Manufacturing Co., Two Rivers, Wis., to all employees, President Si Schwartz, in addition to presenting bonus checks equivalent to 6% of each employee's wages, announced a new "Merit Award" policy, designed to give public recognition to individuals who have contributed outstanding services to the company and its trade during the preceding year.

"The past year (1947) was the most successful in the 30-year history of our company", said President Schwartz, "and every employee has contributed more than his or her share to this success. There are two men, however, whose achievements have been most outstand-

ing, and I am happy to see that everyone in the organization agrees that this year's Merit Awards were unquestionably won by our General Sales Manager, T. Robert Sullivan, by reason of his development and promotion of the new Perfection DUBL-CHEM-FACED MILK Filter Discs". Mr. Sullivan was presented with a wrist watch.

"And our other 'Man of the Year' ", continued President Schwartz, "whose responsibility was production on a scale never before attained here, is Superintendent Al Zoerb". Mr. Zoerb received a handsome electric clock.

●

NAMED GENERAL MANAGER

Appointment of William R. Isaly to the post of General Manager and Treasurer of The Isaly Dairy Company of Marion, Ohio was recently announced by H. W. Isaly, president of the company. The appointment was effective December 15, 1947.

Mr. Isaly was formerly General Manager and Treasurer of Isaly's Creamery Products, Incorporated of Fort Wayne, Indiana. He succeeds his brother, Richard C. Isaly, in his new position.

The position of General Manager and Treasurer of Isaly's Creamery Products, the post held by Mr. Isaly until his appointment to the Isaly Dairy Company, will be taken over by Lloyd L. Siler, formerly plant superintendent of the Fort Wayne plant.

●

BRICE S. HULL PASSES

Brice S. Hull, Pittsburgh branch manager of Solvay Sales Division, Allied Chemical & Dye Corporation, died suddenly of a heart attack on January 2, 1948.

Mr. Hull, born in Van Wert, Ohio, was graduated from Ohio State University in 1914 with the degree of Bachelor of Science in Chemical Engineering, later completing graduate work there and at the University of Pittsburgh. He did technical service work for the Drackett Company until 1922, when he joined

●

EXPORT DAIRY EQUIPMENT

Dairying concerns throughout the world are taking an increasing volume of bottle handling plant from British manufacturers and expansion of this industry into Scotland over the post-war period has brought a share of this export trade to the North. The new Graham-Wing & Evans in Cincinnati in a similar capacity. In 1923 Mr. Hull became Pittsburgh branch manager for Wing & Evans, remaining in that position when the firm was absorbed by Solvay Sales in 1927.

Enock Manufacturing Company plant at Portobello, Edinburgh, is now producing equipment for export and recently shipped one of the largest milk bottle washing machines from this factory to Australia.

Bottle washing machines are also going, as production expands, to South Africa, New Zealand and other Empire countries. Among units now being produced are several with a cleaning capacity of 13,500 bottles an hour.

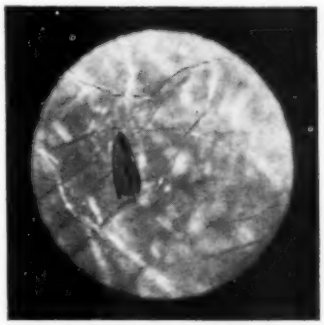
●

SWENSON CONSOLIDATES

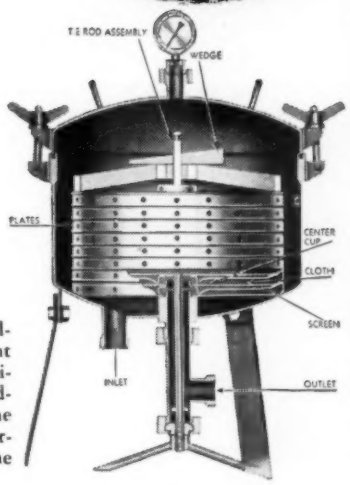
The Swenson Evaporator Co. Division of Whiting Corporation, Harvey, Illinois, announces the consolidation of its Chicago Spray Dryer office with the Swenson offices in Harvey. This move will be made April 1, 1948.

Effective as of February 2, 1948 Mr. V. H. Ross will head Spray Dryer Sales as related to dairy and food applications. Mr. Ross has been associated with the spray drying field since 1925 when he was with the M & R Dietetic Laboratory, Columbus, Ohio. In 1927 he joined the Douthitt Spray Dryer organization which was, in 1943, purchased by Swenson.

The consolidation will enable the Spray Dryer Section to render greater services to customers as the company maintains a full-scale spray drying plant at Harvey to assist prospective customers in the evaluation of the process as it pertains to their particular products.



Keep Dairy Products PURE with SPARKLER Horizontal Plate FILTERS



The problem of sediment in dairy products has become extremely important during the past few years. Often sediment pads of cream or other dairy products which appear quite good to the unaided eye are found to have undesirable material when examined under the microscope.

The illustrations shown here are examples of the types of harmful and objectionable impurities that often contaminate dairy products. Sparkler filters, using the horizontal plate principle, are assurance that all foreign substances are eliminated from the liquid being filtered.

Among the many materials removed from dairy products by Sparkler filters are feather and insect parts, vegetable matter, sand and clay, and cloth fibers. The incidence of rodent type hairs also is effectively reduced.

Construction and Design Features

1. Larger filtering area for continuous operation.
2. Positive "Sparkler" Wedge Seal—no by-passing.
3. Inexpensive, disposable filter medium—prevents blanking.
4. Easy cleaning — all parts made of rolled, stainless steel; quickly removed for washing.

Write for details

SPARKLER MANUFACTURING CO.
Mundelein, Illinois

USING OUR SEPARATOR • ITEMS OF INTEREST SKIMMED FROM HERE AND THERE

Announces New "Supermixer"

THE "SUPERMIXER", a 500 gallon stainless steel mixer-pasteurizer for ice cream mix, has been announced by the Pfaudler Company, Rochester, N. Y. The equipment, also to be offered in 300 and 1,000 gallon sizes, is ruggedly built to handle all frozen or powdered

products, A special agitator has been designed to handle frozen products in perfect safety. A two-speed agitator drive permits processing of a partially filled vat without burning or coating on the sides, and when operated in low speed, com plete contents of vat can be emptied, still maintaining uniform quality.

Specifications

1. Closed top with self-draining two-piece cover.
2. Jacket vapor-steam heated and protected against overpressure. May be flooded with cold water when cooling and cleaning.
3. Welded stainless steel thermometer wells—when cleaning vat instruments may be left in place without damage.
4. Quick dismantling plug type valve.
5. Two-speed motor drive with stainless steel drive supports.
6. Vat insulated and stainless steel sheathed with stainless clad bottom head for strength and corrosion resistance.
7. Bottom head channeled to outlet valve for complete drainage.
8. Stainless steel reinforced agitator.
9. Stainless steel leg supports with non-corrosive alloy legs.

●

New Water Rectifier

A WATER RECTIFIER that removes accumulations of lime scale and rust from bottle-washers, boilers, condensers, ice machines and other water using equipment has been announced by the Limex Corporation of Indianapolis, Indiana.

The equipment, in combination with Limex Mineral removes the scale encrustation gradually in a light sludge form. Once the equipment is cleaned of the deposits, the manufacturer of the rectifier claims, further formation is prevented. Constant and positive water treatment for the entire plant is achieved.

A water test kit is supplied with the rectifier in order that the proper amount of mineral compound to be used may be determined. One filling of the rectifier will last from eight to ten days and no further adjustments are necessary once the proper amount of treatment for a particular type of water has been determined.

The principle of the Limex system, according to the manufacturer, is to neutralize the calcium, magnesium, and iron oxide elements of the water and hold them in suspension. This prevents the formation of scale and removes already existing scale deposits. The system is not a filtration or exchange process the manufacturer says, and no regeneration of the rectifier or mineral compound is necessary.

●

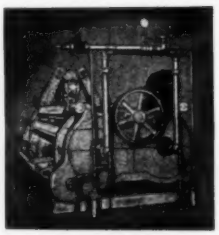
"High-Speed" Water Heater

A NEW FAST ACTING WATER heater that can be attached to any pipe line anywhere, has been made available by the Rite-Way Products Company of Chicago. The rapid heating feature of the equipment makes it possible for a 3, 5, or 7 gallon

capacity to take care of nearly all ordinary requirements. An adjustable thermostat set at 180 degrees provides for mixing cold water with hot which more than doubles the capacity of the heater in terms of useable hot water.

Stainless steel is used throughout in manufacturing the heater. Twin heat-

Better DRY MILK AT LOWER COST



DRY MILK MACHINES
Built in Five Sizes

The patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs.

Complete details upon request.

OVERTON MACHINE COMPANY
DOWAGIAC MICHIGAN

Why? DO YOU PAY MORE?
CORROSIVE SUBLIMATE TABLETS
COST MUCH LESS!
500 PER BOTTLE
CONVENIENT—DISPENSED SAFELY
— 500 OR 5,000,000 —
DIRECT TO YOU—CUT YOUR COSTS
WRITE TODAY—IT WILL PAY DIVIDENDS
Unēk Products Company
DEPT. T OCONOMOWOC, WISCONSIN

ing elements around the water tank are controlled by a Camstat Thermostat with silver points. The tank is vibration-packed with moisture-proof and fireproof insulation.

The Rite-Way Products Company, which distributes other types of dairy equipment, says that the water heater is used by creameries, milk producers, grocery stores, and many other "point of use" locations.

●

Safe Anti-Roach Coating

NO-ROACH, A COLORLESS LIQUID coating that is said to be effective against roaches for six months has been placed on the market by the Gaston-Johnson Company of New York.

The coating, which is brushed on, dries quickly and then stays effective to kill later hatches of the insects. It is said to be safe and sanitary as well as harmless to children and pets. All roaches that walk across the coating become paralyzed and die within four hours. According to the manufacturer, infested premises can be made roach free within three or four days.

The coating can be removed with water and is said to be many times more effective than DDT. No-Roach is a viscous liquid that is creamy white in appearance. It dries to a colorless, odorless invisible coating that will kill all other types of insects such as ants, water-bugs, silver fish, and weevils.

It is available in 2 ounce, 8 ounce, 16 ounce, quart, half gallon and gallon lots.

●

Sanitizing Agent, Tablet Form

AMERSE TABLETS, developed by Vestal Laboratories, Inc., St. Louis, contain 30% active quarternary ammonium salt in an inert, non-toxic filler and are controlled to give 150 ppm. active ingredients in 2½ gallons of water. One tablet in 2 gallons of water will produce 200 ppm. active ingredients.

The Amerse Tablets offered are for sanitizing eating and drinking utensils and food processing equipment in restaurants, fountains, taverns, dairies and other food plants. According to the manufacturer the tablets eliminate measuring and waste—there is no spillage, freezing or extra work.

The tablets are said to dissolve completely in 2 to 3 minutes. Dissolution time can be accelerated by agitation.

●

Floating Heater for De-icing

A FLOATING WATER HEATER that prevents stock watering troughs from freezing over, even in sub-zero weather, is being made in the Meadville, Pa. plant of Westinghouse Electric Corporation. Farm animals can easily nose the floating heater aside without danger of getting burned or frightened as the outer surface never gets hotter than "warm."

The new water trough de-icer is a 2¼-inch thick disk 10-inches in diameter that contains a 500-watt heating element controlled by a thermostat. It floats on the surface of the water and the rubber covered cord plugs into any 110/115-volt outlet.

In coldest weather, the cost of operating the new de-icer is less than five cents a day, according to the manufacturer.

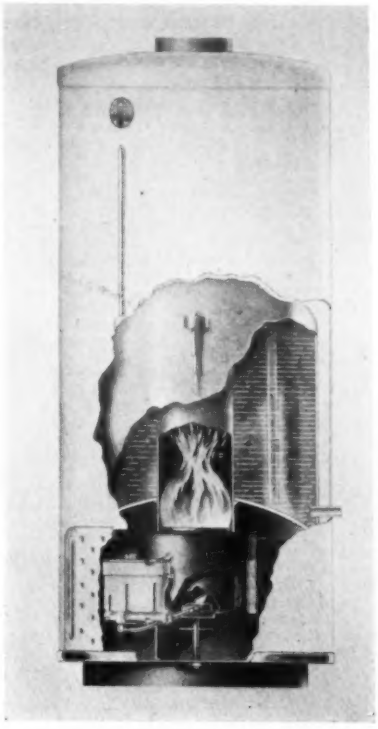
●

Oil Burning Water Heater

A NEW, AUTOMATIC OIL-BURNING Water Heater is announced by J. L. Gillen Company of Dowagiac, Michigan.

One of the outstanding features claimed by the manufacturer is that, the controls are completely enclosed within the casing. This feature is claimed to eliminate the likelihood of damage by accidental bumping with broom, mop or other moving objects. Another virtue claimed for this feature is that it permits placing the water heater in a smaller space.

A new improved low draft burner concentrates a swirling-action flame at the base of the flue casing for greatest efficiency, and rests on a screw-jack support to permit quick and easy lowering for servicing. The "pilot" with in-



built anti-flooding device is not affected by variable drafts and is guaranteed to burn evenly at all times.

Thermal bulb automatically controls water temperatures as desired from 125° to 165° F. A jacket of Fibreglas insulation on top and sides is designed to save heat and give faster recovery.

A magnesium alloy anode with special current-limiting resistor is another feature of the new models. This device, it is claimed, will prevent electrolytic action, rust and corrosion, and greatly prolong tank life.

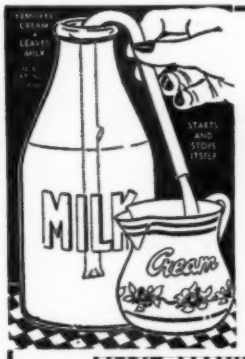
POWDERED CONDENSED MILK

A DEPENDABLE NATIONAL OUTLET

Buyers Roller and Spray Whole and Nonfat Dry Milk Solids. Bulk Sweetened Skim, Condensed.

It will pay you to supply us regularly.

SIMMONS DAIRY PRODUCTS, LTD.
27 West Front Street Cincinnati 2, Ohio
Phone Main 0461 Special Long Distance Phone Cincinnati LD 163



NEW — INTERESTING — USEFUL

MAGIC CREAM SIPHONS, for home use, remove cream from bottled milk, for use with coffee, cereals and desserts.

PLEASE OLD CUSTOMERS—WIN NEW FRIENDS

Leading dairy firms find Magic Cream Siphons a welcome sales booster aid. Housewives appreciate them and homes using a cream remover will consume more milk, when convinced by experience that many dishes are improved by the liberal use of milk instead of water in cooking. Free sample, for round or square bottles. Two models are made.

$12.50 per gross-$83.00 per 1000
Complete Satisfaction Guaranteed

MERIT MANUFACTURING COMPANY
3455 EAST 150TH STREET CLEVELAND 20, OHIO

WANTS and FOR SALES

RATES: "Position Wanted," 50c. Limit of 50 words; 2c for each additional word. All other advertisements, 5c a word ($1.00 minimum). Keyed ads, 15c extra to cover return postage. The name and address should be included in counting the words. All payments strictly in advance.

Replies to keyed ads should be sent to the box number, care of Urner-Barry Co., 173 Chambers St., New York 7, N. Y.

FOR SALE — EQUIPMENT

FOR SALE—1 specialty brass I.T. cooler, 10—2″ Stainless Steel milk tubes, 14′ 0″ long, practically new. Fair Lawn Dairy Farms, 5-01 River Road, Fair Lawn, New Jersey. 3-M-2

FOR SALE—2M qt. cases for square bottles, 2M qt. cases for round bottles; 1 Union Viscolizer 450 to 500 gals. per hour capacity, complete with motor and silent chain drive, new style bronze head, completely removable stainless steel valves, N. Y. C. approved in Eastern plant. Box 250, care this publication. 3-M

FOR SALE—100 gallon Round S.S. Pasteurizers; 100 to 300 gallon S.S. Spray Vat Pasteurizers; 350 and 550 gallon Jensen Vertical S.S. Coil Vats; 5 ft. 24 tube, 8 ft. 22 tube and 10 ft. 28 tube Combination Direct Expansion Coolers; 9 ft. 10 tube, 12 ft. 10 tube and 12 ft. 16 tube Internal Tubular Coolers; Cherry-Burrell Super Plate Type Cooler, 40 s.s. plates; Cherry-Burrell Junior Cabinet Cooler, 7 wings each having 48¾″ x 3′ T.C. tubes; G-70, G-100, G-160 and G-200 Cherry-Burrell Nu-Line Fillers; Model 6-16 Cherry-Burrell Filler; 4, 6 and 8 wide Soaker Type Bottle Washers; Lathrop-Paulson Straitaway Can Washer about 10 c.p.m.; Lathrop-Paulson and Creamery Package Rotary Can Washers, 3 c.p.m.; No. E-28 and No. 72 DeLaval "Air-Tight" Separators; 7,240 lb. Westfalia "Air-Tight" Clarifier with No. 25 Waukesha Pump; 125, 300, 400, 650, 800 and 1000 gallon Homogenizers with Stainless Steel heads, also Bronze Head Homogenizers ranging in sizes from 75 to 450 gallons in capacity; 500 and 1000 gallon Creamery Package Stainless Steel Storage Tanks with direct expansion agitators; 300 gallon Pfaudler Horizontal Stainless Steel Surge Tanks; 400, 850 and 1000 gallon Glass Lined Tanks; 2240 gallon Heil Stainless Steel Truck Tank; Buffovak S.S. Vacuum Pan, Capacity 90 gallons Condensed per hour; 36″, 42″, 48″ and 72″ Copper Vacuum Pans; New Model "MS" Tri-Clover Stainless Steel Centrifugal Sanitary Pumps, ¼ h.p.; Lathrop-Paulson two compartment Stainless Steel Weigh Can, 58″ x 44″ x 21″; Cherry-Burrell and Creamery Package Churns, 150 and 400 lbs. capacity. Write or wire your particular requirements and plan to visit our new warehouse and shop. Lester Kehoe Machinery Corporation, 1 East 42nd Street, New York 17, N. Y. 3-M

FOR SALE — EQUIPMENT

8275 EACH—8 wide Meyer Dumore—300 gal. C. P. Coil Pasteurizer—L Milwaukee Filler—1000 lb. 2 Comp. dump tank and receiving vat—4x4 Ammonia compressor with 10 h.p. motor—30 h.p. boiler—12 ft. I.T. cooler, 16 sections. Glendale Farms Dairy, Lakewood, N. J. 3-M

FOR SALE
Milk Plant Equipment
* * *
PUMPS
Mojonnier Sanitary Milk Pump
Geared Milk End
10 G PM — 355 RPM with Variable Drive Motor — 2 Hp. 3/60/220 V.
High Pressure Milk Pumps
Triplex Belt Driven
Mfg. by Merrell-Soule Co.

SEPARATORS
Titan Separators Skim
10,000 Lbs. Per Hour - Motor Drive
Also DeLaval No. 71
Steam Driven
Capacity 2000 and 3000 Lbs. Per Hour

REFRIGERATION
1-Ton Norge Complete
With Cooling Unit Fan and Motor

PASTEURIZERS
2—50 Can Stainless Steel Lined
Paddle Type with Outer Copper Jacket - Belt Driven
2—400 Gal. Capacity Glass Lined
With Agitators and Motors
Mfg. by Pfaudler Co.

VERTICAL TANKS
Glass Lined
1—400 Gal. Holding Tank
1—600 Gal. Holding Tank

Motors - Starters - Safety Switches
Belting and Hose
AT
RUDERMAN MACHINERY EXCHANGE
Phone 333-334
GOUVERNEUR, N. Y.

FOR SALE — EQUIPMENT

FOR SALE—One Fort Wayne bottle filler 2 bottle capper with stainless steel tank and cover, rebuilt, like new $150.00; one Milwaukee 4 bottle filler 1 bottle capper with porcelain tank, and aluminum cover and strainer holder, rebuilt, like new $100.00; quantity of round bottle quart size wood milk cases; new nickel alloy and stainless steel sanitary pipe and fittings in stock. Consult us for all dairy supplies and equipment, new and used. Catalog. Stoelting Brothers Company, Kiel, Wisconsin. 3-M

FOR SALE—Two 200 gallon Cherry-Burrell Stainless Steel inside and outside Pasteurizers, Sentinel control; one McGuire all Stainless Steel Internal Tube Cooler, 8000 pound capacity—can be used as preheater; One 450 pound Stainless Steel Cherry-Burrell Self Contained Weigh Can with 1½ h.p. Flex Flow pump; one Model C 6 wide Cherry-Burrell Bottle Washer—recently overhauled; One Oakes Burger Rotary Can Washer, 4 cans per minute, 2 years old; One DeLaval World Series No. 19 Separator Stainless Stell Discs; one Cherry-Burrell 8,000 pound per hour Milk Filter, Stainless Steel. All this equipment can be seen in operation until March 15th, 1948, when it will be replaced by larger equipment. Johanna Farms, Inc., Flemington, N. J. 3-M

FOR SALE—One CP Pasteurizer, 300 gallon, coil type, motor driven. One CP milk bottler and filler, six filler three capper, 24 bottles per minute, 56mm capper. Half pint milk bottles, 56mm. Sac City Creamery Co., Sac City, Iowa. 3-M

FOR SALE—Two compartment Stainless Steel Weigh Can, about 36″ wide x 45″ long x 22″ deep with Howe Pedestal Type Dial Scale and Stainless Steel Receiving Vat approximately 50″ wide x 116″ long x 28″ deep with agitator. Box 257, care this publication. 3-M

USED EQUIPMENT FOR SALE—Reconditioned Von Gunten milk filter and stand. The Filter Paper Company, 2460 So. Michigan Ave., Chicago 16, Ill. 3-M

FOR SALE—One Taylor 5 gal. freezer with 20 gal. mix and 60 gal. hardening storage with 2 h.p. water cooled compressor. New machines in original crates. Hoile's Dairy, Mauston, Wis. 3-M

FOR SALE—One 1½ ton and one 1 ton Divco Milk Trucks, heater and Y license; Sonic Oscillator, 240 gallons per hour, 1947 model, for Homogenized milk; Monroe Bookkeeping and Posting Machine, perfect for creamery accounts receivables. Arrowhead Cooperative Creamery, Duluth, Minn. 3-M

FOR SALE—Six 1941 Divco Trucks—Model "UM"—Excellent conditions. Apply Fair Lawn Dairy, 5-01 River Road, Fair Lawn, New Jersey. 3-M-2

FOR SALE—Used milk plant equipment. Fine selection. Otto Biefeld Co., Watertown, Wis. 3-M

Every type dairy brush you need

Metal sponges

Aprons of rubber, plastic and oilskin

Creamery hose and rubber footwear

SAVE TIME! Consolidate Your Purchasing by Using the Complete E-Mac Line

For Our Complete Line of Dairy Supplies Write For Catalog No. 11

E-Mac DAIRY BRUSH CO., Reading, Pa.

STERILINE

PASTEURIZERS · STORAGE TANKS
WIPER-BLADE VATS

"LIFETIME EQUIPMENT FOR A LIFETIME OF GOOD SERVICE"

STEEL AND TUBE PRODUCTS CO.
4300 North Port Washington Road
Milwaukee 1, Wis.

FOR SALE — EQUIPMENT

FOR SALE—Cheap—Used stainless steel insulated milk tanks—1800 gallon tank only; 2000 to 3500 gallon on trailers, and frameless and plant storage tanks, also new. Myer Simon, 150 West 87th St., N. Y. 24, N. Y. 3-M

FOR SALE—9 insulated, glass lined 3,000 gal. capacity Horizontal milk tanks, removed from Pfaudler cars, in good condition, inside dimensions approximately 78" diameter by 14' long. Located Chicago district with available auxiliary electrical and agitator equipment. All available for inspection. Priced "as is". Communicate with H. L. Roth, Fruit Growers Express Company, 1101 Vermont Ave., N.W., Washington 5, D. C. 3-M

FOR SALE — MISCELLANEOUS

FOR SALE—Chocolate Milk made with Bradway Non-Settling Chocolate Syrup and Powder is superior. Place your trial order now. BRADWAY CHOCOLATE COMPANY, New Castle, Ind. 3-M-t.f.

FOR SALE—Used milk bottle crates. Can deface old name and rebrand. Write or phone for present day inventory. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland, Ohio. 3-M-t.f.

FOR SALE—25 Gross (never used) round quart bottles with No. 2 cap seat. Also used quart, pint and one-half pint bottles and wire cases. F.O.B. Iron Mountain. Pine Mountain Dairy, Iron Mountain, Mich. 3-M-t.f.

USED MILK CRATES—We have around six hundred round quart bottle crates in very good condition—make an offer on the lot. Coley's Dairy, Inc., 220 Parkdale Ave., Buffalo 13, N. Y. 3-M

BUSINESS OPPORTUNITIES

CREAMERY FOR SALE, in the State of Washington. One of the most prosperous growing Cities in the United States. This City before the war had a population of 5,000, at present it has a population of 75,000 to 100,000. It is predicted by good authorities that this City will be about 200,000 within the next 5 years. This is the only plant within a radius of 50 miles, and is is doing over a million dollar business per year. The commodities we manufacture and wholesale are as follows: Butter, Ice Cream, Milk, Sweet Cream, Buttermilk, Cottage Cheese, and we handle other kinds of Cheese, Eggs—Locker Rooms in connection. This plant has been operated by the same party since 1922. All trucks and equipment are practically new. Would like to sell this on instalment with a reasonable down payment. The reason for selling—want to retire from business. Box 253, care this publication. 3-M

BUSINESS OPPORTUNITIES

FOR SALE—Milk business in large city in New York State, about 1,000 qts. pasteurized retail daily. Completely equipped—room for expansion. Price $14,000. Terms. Box 252, care this publication. 3-M-2

FOR SALE—Ice Cream and Milk Plant. A good one, well located, well equipped. Box 254, care this publication. 3-M

MILK BUSINESS—In city of south western Michigan of about 2,000 population plus surrounding territory. 700 to 800 quarts daily. Three routes. Two late model trucks. Price $25,000, includes $10,000 home, $8,000 plant, plus equipment and real estate; also good ice cream business and equipment. Good margin. Owner selling because of other business interest. Box 255, care this publication. 3-M

POSITION WANTED

DESIGN AND DEVELOPMENT Engineer thoroughly experienced in dairy industry. Established executive and sales ability. Replies confidential. Box 264, care this publication. 3-M

PRODUCTION MAN, scientific, practical and progressive seeks position in modern Ice Cream plant or Creamery. Expert in the manufacture of all ice cream products, also cream cheese, hot or cold pack process, cultured sour cream and buttermilk. Box 262, care this publication. 3-M

HELP WANTED

MARKET MILK PLANT — LATIN AMERICA — Manager — 8 years as manager Market Milk Plant; age 35-45. Superintendent — 5 years as Superintendent Market Milk Plant; age 30-40. Attractive Salary. Write full details. Box 263, care this publication. 3-M

WANTED — REPRESENTATIVE — Now calling on dairies, ice cream plants and jobbers of kindred products to represent old established processor of fruit products. Exclusive territories open nationally on liberal commission arrangement. Write giving experience, references and territory you desire to work. Address letters to Mr. G. L. Dorsch, Sales Manager, Standard Fruit Processing Company, 2600 West 19th St., Chicago 8, Ill. 3-M

MILK PLANT SUPERINTENDENT—So. California—$400.00. Five Years' Experience as Superintendent Market Milk Plant. Age 35-45. Write full details. Box 258, care this publication. 3-M

WANTED—In Greater New York, man in early 30s, experienced in milk and dairy products, sales and accounting. Fine opportunity in New York City office of progressive milk organization. Write stating age, experience and salary expected. Box 256, care this publication. 3-M

HELP WANTED

WANTED—Experienced plant foreman for Grade A bottling plant. Large Volume. Must be able to plan work each day and organize men and their work in a really efficient set-up. Responsible position. Excellent salary. Box 259, care this publication. 3-M

WANTED — Superintendent for New York City approved milk plant located in New York State. Must have knowledge of manufacturing heavy sweet cream, sour cream, ice cream mix, skim condensed milk and roller skim powder. Also knowledge of equipment maintenance. Box 246, care this publication. 3-M-t.f.

PLANT MANAGER WANTED—We are looking for a competent, qualified and experienced man fully familiar with New York City Health Department regulations to manage and take complete charge of a milk plant in Pennsylvania. We manufacture cream, milk powder, sweetened condensed milk and other related milk products. This will be a good opportunity for the right party, with advancement assured. When writing please give us complete details as to past experience, references, and starting salary wanted. Any information submitted to us will be held strictly confidential. Box 248, care this publication. 3-M

WANTED—Plant Manager for pasteurizing plant located in New Jersey, handling about 100 cans milk daily. Box 251, care this publication. 3-M-2

WANTED

WANTED—SKIM MILK, year round; New York State plant or nearby. Plant must have facilities for cheese making. Box 245, care this publication. 3-M-t.f.

WANTED TO BUY—Milk Bottling Plant—Equipped with American Can Container Machine. Box 247, care this publication. 3-M-2

IMMEDIATE DELIVERY

S. Pinn & Son offers immediate delivery from all your steam problems.
Boilers and Machinery Installed.
Plants Modernized.
Steam and Conservation Surveys
(Eastern Territory Covered)
S. PINN & SON
1271 Hoe Avenue New York 59, N. Y.
3-M-t.f.

WANTED TO BUY for cash, creamery receiving 150 cans or more from producers. New York, New Jersey or Pennsylvania area preferred. Box 249, care this publication. 3-M

WANTED—Three stainless steel 20 can pasteurizers, Wright or equal. Must be in perfect condition and complete with agitators. Give full details. Box 261, care this publication. 3-M

Sales Service for Manufacturers of
MILK PRODUCTS
Evaporated Milk—Powdered Skim Milk — Powdered Buttermilk — Condensed Skim and Whole Milk — Powdered Whole Milk.
C. W. BURCKHALTER, Inc.
156 Franklin St. New York, N. Y.
WAlker 5-0727

COFFEE the Milky Way
Café Reg. U. S. Pat. Off.
—Olay—

AMERICAN FOOD LABORATORIES, INC.
860 ATLANTIC AVENUE, BROOKLYN 17, N. Y.

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OF EVENTS TO COME

Michigan Association of Ice Cream Manufacturers—Annual convention. Pantlind Hotel, Grand Rapids. March 3. Glenn L. Orr, P. O. Box 213, Detroit 2. Secretary.

Northwest Creamery Owners' Association—Annual meeting. Radisson Hotel, Minneapolis, Minn., Mar. 3. C. E. Bergquist, 800 New York Bldg., St. Paul 1, Minn., Secretary.

Michigan Allied Dairy Association—Annual convention, Pantlind Hotel, Grand Rapids, Mich., March 2-4, 1948. L. N. Francke, 1110 Olds Tower Bldg., Lansing, Mich., Secretary.

Minnesota Creameries Association—Annual convention, Radisson Hotel, Minneapolis, Mar. 4-5. N. H. Olson, 800 New York Bldg., St. Paul 1, Minn., Executive Secretary.

Dairy Products Association of Kentucky—Annual convention, Louisville, Ky., March 11 and 12, 1948. F. T. Flynn, 128 E. Chestnut St., Louisville, Ky., Secretary.

Louisiana Association of Ice Cream Manufacturers—Annual convention will be held at the Jung Hotel, New Orleans, La., March 22 to 24, 1948. Secretary, John P. White, Sr., Pelican Creamery, East Main St., New Iberia, La.

American Bulk Condensed Milk Association—Annual meeting, Edgewater Beach Hotel, Chicago, Ill., April 19, 1948. H. C. Darger, 1 N. LaSalle St., Chicago 2, Ill., Executive director.

National Dairy Council—Summer conference, Edgewater Beach Hotel, Chicago, Ill.; June 14-16, 1948. Milton Hult, 111 No. Canal St., Chicago 6, Ill., President.

American Dairy Science Association—Annual convention, University of Georgia, Athens, Ga., June 14-16, 1948. R. B. Stoltz, Ohio State University, Columbus, Ohio, Secretary.

New York State Association of Milk Sanitarians—Annual convention, Hotel Statler, Buffalo, N. Y., September 22-24, 1948. C. S. Leete, New York State Department of Health, Albany, N. Y., Secretary.

Dairy Industries Exposition—Atlantic City, New Jersey, October 25-30, 1948. Roberts Everett, 616 Albee Bldg., Washington 5, D. C., Executive Secretary.

International Association of Ice Cream Manufacturers—Annual convention, Atlantic City, N. J., October 25-27, 1948. R. C. Hibben, 1105 Barr Bldg., Washington 6, D. C., Secretary.

Milk Industry Foundation—Annual convention, Atlantic City, N. J., October 28-30, 1948. E. B. Kellog, 1001 - 15th St., N. W., Washington, D. C., Secretary.

●

LEAVES CRESCENT PAPER CO.

Crescent Paper Company announces that Mr. Robert H. Ziegler who, for the past five years, has been General Manager of the Food Packaging Division, has severed his connection with this organization and will devote his entire time to the manufacture and sale of Econ-O-Seal closures.

Mr. William L. Howell, who has been associated with Crescent Paper Company as Mr. Ziegler's assistant for the past four years, becomes the new manager of the Food Packaging Division. Prior to his connection with this company Mr. Howell was associated with the McFarland Paper Company, Keokuk, Iowa.

The Econ-O-Seal Company was a division of the Crescent Paper Company, and now has become a division of the Basca Manufacturing Company, manufacturers of the equipment and Econ-O-Seal aluminum closures. The Econ-O-Seal Company's new address is 2222 North Olney Street, Indianapolis, Indiana, from which address it operates nationally in the sale and distribution of the aluminum Econ-O-Seal bottle closures.

NEW MOJONNIER APPOINTMENT

Chicago, Ill.—Mojonnier Bros. Co., Chicago, nationally-known manufacturer of quality dairy and food processing equipment, announces the appointment of William H. Bratt as sales representative for all of Michigan, Toledo, Ohio, and neighboring Canada, effective March 1.

Though young in years, 36 years of age, Bill Bratt brings to his new post a 12-year background of Mojonnier field service in the dairy industry. His first year and a half with Mojonnier was spent on the service end; the following

WILLIAM H. BRATT

four year period on sales in Illinois and for the last six and one half years he has represented Mojonnier in the South Western States where he made many friends and customers.

He is married, has two children, a boy and girl, and headquarters for his new job have been established at 2854 Mortenson Blvd., Berkley, Michigan.

Mr. Bratt's engaging personality, coupled with a thorough knowledge of the dairy business and a sincere desire to be of service, should win him many friends in the new territory.

●

ELECT NEW OFFICERS

Ninety-two members and guests were present at the December meeting of the Chicago Dairy Technology Society.

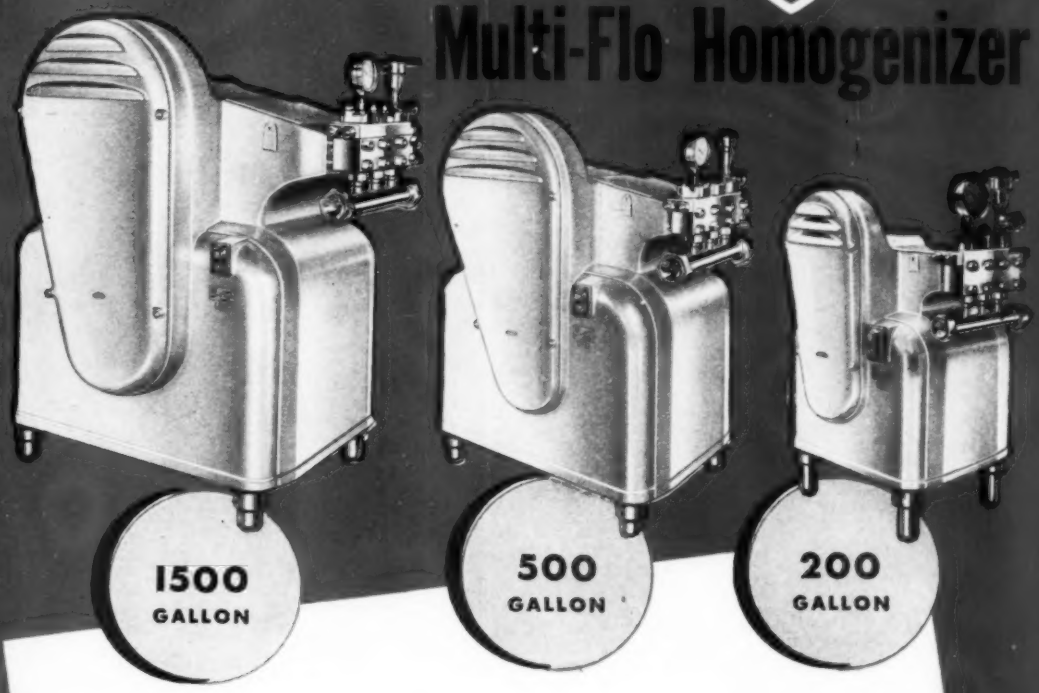
Speaker of the evening was Dr. Herbert McAuliffe who discussed "The Application of the Plant Laboratory".

New officers elected for 1948 are as follows:

President, Gilbert G. Gibson, Sidney Wanzer & Sons, Inc.; Vice-President, George Hussander, Cherry-Burrell Corp.; Secretary, Dr. P. H. Tracy, University of Illinois; Treasurer, H. C. Schroeder, Hawthorne-Mellody Farms Dairy; Sergeant at Arms, Adolph Brunner, Geo. F. Schwartz Ice Cream Mfg. Supplies.

FOR 1948

Multi-Flo Homogenizer



If you need new homogenizers—or extra capacity —for milk or mix, delivery is much improved on most sizes. Ask for Bulletin N-12, giving all the facts on the efficiency, economy and quick cleaning features which make CP Multi-Flo Homogenizers outstanding buys.

THE Creamery Package MFG. COMPANY

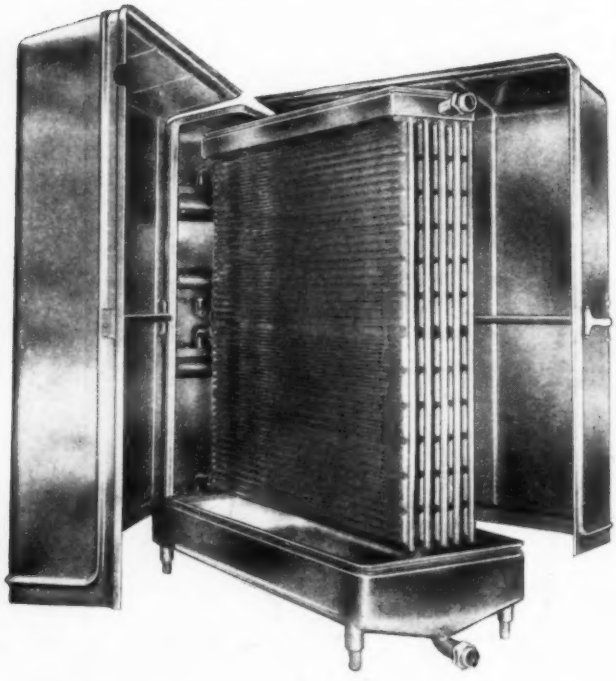
General and Export Offices: 1243 W. Washington Blvd., Chicago 7, Illinois

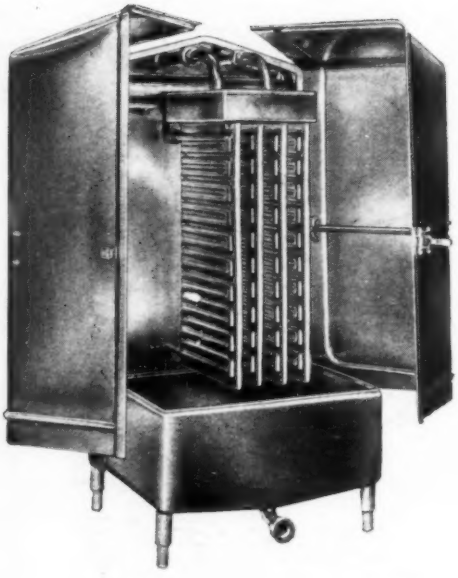
SALES BRANCHES: Atlanta • Boston • Buffalo • Chicago • Dallas • Denver • Houston • Kansas City, Mo. • Los Angeles • Minneapolis • Nashville New York • Omaha • Philadelphia • Portland, Ore. • St. Louis • Salt Lake City • San Francisco • Seattle • Toledo, Ohio • Waterloo, Ia.

CREAMERY PACKAGE MFG. CO. OF CANADA, LTD., 267 King St., West, Toronto 2, Ont.

THE CREAMERY PACKAGE MFG. COMPANY, LTD., Avery House, Clerkenwell Green, London E.C.1.

GOOD REFRIGERATION IS A SMALL ITEM IN YOUR PRODUCT COST





Above:
Mojonnier Stainless Steel Senior Compact Cooler, Model 8-5-48, capacity over 1,000 gallons of ice cream mix or cream per hour cooled to 34° F., or 15,000 pounds of milk per hour.

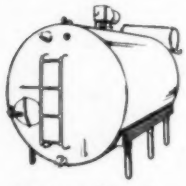
At Right:
Mojonnier Junior Cooler, Model 8-4-20, present capacity 125 gallons of cream per hour. Maximum capacity with 8 sections—250 gallons per hour. Typical application: Cooling cream from the separator.

The surprising thing about dairy products is that cooling them to icy-cold temperatures can cost so little. Icy-cold products keep and keep—with little flavor change. Good refrigeration is about the smallest item entering into your product cost, *so why be satisfied with less than the best.*

In hundreds of plants everywhere, Mojonnier Coolers are cooling dairy products of all types to icy-cold temperatures from the start of the run to the very last pound—and at lowest possible cost. Whether your problem is cooling raw milk, pasteurized milk, ice cream mix, cream or evaporated milk (or chilling water with ammonia) there is a Mojonnier Cooler of the exact size to meet your requirements. Mojonnier Compact Coolers are made in all capacities from 300 to 60,000 pounds of product per hour. The full cost-saving story is contained in illustrated Bulletin No. 153. Send for it today.

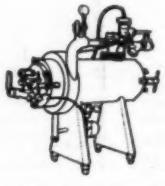
MOJONNIER BROS. CO., 4601 W. OHIO ST., CHICAGO 44, ILL.

OTHER MOJONNIER ENGINEERED PRODUCTS SERVING THE DAIRY INDUSTRY



COLD-WALL, PLAIN TANKS

ZONE-CONTROL VATS



TUBULAR HEAT EXCHANGERS

Mojonnier

COMPACT COOLERS